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THE

SATURDAY MAGAZINE.

VOLUME THE EIGHTEENTH.

JANUARY TO JUNE.

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THE

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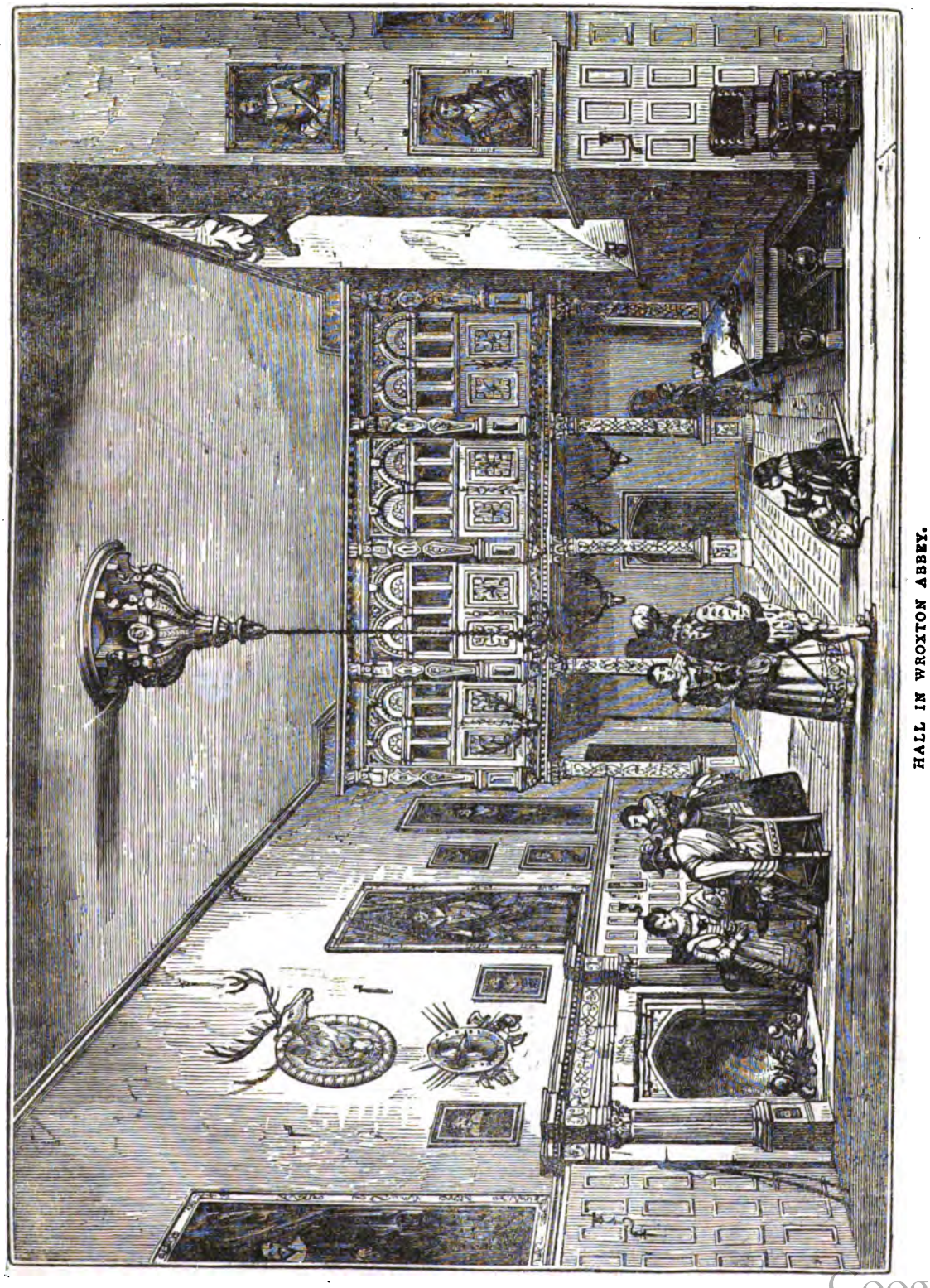

HALL IN WROXTON ABBEY.
From Nash's *Mansions of the Nobility in the Olden Time.*

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WROXTON ABBEY, OXFORDSHIRE.

> The stately homes of England,
> How beautiful they stand!
> Amidst their tall ancestral trees,
> O'er all the pleasant land.
> The deer across their greensward bound
> Through shade and sunny gleam,
> And the swan glides past them with the sound
> Of some rejoicing stream.—HEMANS.

WE have, on one or two occasions, presented the reader with copies of some of the admirable engravings contained in Mr. Nash's *Mansions of England in the Olden Time*. The appearance of a second series of that work, and the permission of the publisher to present a view from it in our present Number, offers an opportunity for our again expressing the opinion which we have formed of it.

The idea of presenting views of the mansions of the nobility and gentry in various parts of England, is by no means a new one; for many of our artists and engravers have, at different times, and to different extent, followed up such a plan. We may particularly allude to Mr. Neale's elegant work, entitled *Views of Seats*, which extends to ten or twelve volumes, and contains representations and descriptions of a very large number of mansions. But still something else was wanted; some other feature was looked for, which might carry the imagination back to old times, when, from the peculiar usages and customs of the age, the English gentry were wont to dwell more in the midst of their tenantry and dependents than they are enabled to do at the present day. This is not the place to discuss why it is that such changes occur, during the lapse of time; but certain it is, that the home of an English country gentleman, in the reign of "good Queen Bess," of the Jameses, and the Charleses, presented marked and characteristic features: our authors may describe these characteristic features, and do all that the pen can effect in presenting them to the mind; but the aid of the painter is wanting to produce the full effect.

Now this brings us to the nature and object of Mr. Nash's work. He does not merely represent cold exteriors of large mansions; he carries the spectator within doors, and peoples the halls, the saloons, the libraries, with inmates, habited as they were wont to be in the times of which we have spoken. His plan has been, to visit such old mansions as present the most striking examples of the "Elizabethan" style of architecture, and as have suffered the smallest degree of change by repair; to select some portion of each building, of the most picturesque kind; to furnish it (if, as is usual, it be an interior) with such decorations, furniture, and implements, as were likely to be found in it in times long gone by; to give vividness to the scene by introducing imaginary figures, habited strictly in accordance with the era chosen; and to represent those figures as being employed in such avocations as will illustrate the domestic arrangements and the domestic sports of "merry England," two or three centuries ago. Such was the plan proposed; and the mode of execution is so admirable, that a second series of similar views was speedily called for. This second series is now before us; and from it we select a view of Wroxton Abbey, Oxfordshire, respecting which, we will give a few descriptive and historical details.

Wroxton Abbey is situated in the parish of Wroxton, near Banbury, in Oxfordshire. We will say a few words respecting Banbury, before we visit the Abbey itself.

If we look at a map of Oxfordshire, we find that the northern portion is very narrow, not above eight or ten miles in breadth. At the eastern border of this narrow district, is the town of Banbury, on the river Charwell; and proceeding westward from Banbury, we come to Wroxton Abbey, at a distance of about two miles.

Banbury is a considerable market town, twenty-two miles from Oxford, and seventy-three from London, and contains between five and six thousand inhabitants. This place is supposed to have been occupied by the Romans, from the discovery of some Roman coins and a Roman altar there. About the year 1153, a castle was built here by Alexander, bishop of Lincoln, which continued an episcopal residence till the first year of the reign of Edward the Sixth; and is said to have contained a dreary dungeon for convicts. During the wars of the Roses, the neighbourhood of Banbury was the scene of frequent conflicts, of which the most disastrous was the battle of Banbury, fought in 1469, on a plain called Danesmore, near Edgecote, a village about three miles distant, between the Earl of Warwick on the one side, and the Earls of Pembroke and Stafford on the other; which ended in the defeat of the Yorkists. The town was again the seat of contention, during the civil wars of the Commonwealth. The inhabitants espoused the cause of the Parliament; but the town was taken by the Royalists after the battle of Edgehill, and defended by Sir William Compton, against Colonel Fiennes, for thirteen weeks, till the garrison was relieved by the Earl of Northampton. It was afterwards besieged for several weeks by Colonel Whalley, and surrendered on honourable terms.

The town of Banbury is pleasantly situated in a fertile valley, on the banks of the small river Charwell. The houses are well built, and the streets are lighted with gas. The chief manufactures of the town are cheese, of which a large quantity of superior quality is made, and the celebrated "Banbury cakes;" formerly there was an extensive manufacture of plush, shag, and girth webbing; but this has greatly declined. The church, dedicated to St. Mary, is a spacious structure, erected under the authority of an act of Parliament, obtained in 1790. The living is a discharged vicarage, in the archdeaconry and diocese of Oxford, rated in the king's books at 22*l.* 0*s.* 2*d.*, endowed with 200*l.* private benefaction, 400*l.* royal bounty, and 600*l.* parliamentary grant. Among the places for education are a blue-coat school, established by subscription in 1705, and endowed with property to the amount of 80*l.* per annum: this school was, in 1807, incorporated with a national school, to which a Sunday-school has been since attached. Formerly, there was a free grammar-school here, which was held in such high estimation, that the statutes of Saint Paul's School, London, are said to have been drawn up on the model of those of Banbury School. One of the masters, Mr. Stanbridge, was tutor to the celebrated Sir Thomas Pope; and so great was the reputation which this institution had acquired, that the statutes of the free grammar-school at Manchester, dated 1524, ordain that the grammar be there taught "after the manner of the school at Banbury, in Oxfordshire, which is called Stanbridge grammar."

In proceeding from Banbury to Wroxton Abbey, which is about two miles westward of it, we pass through the small parish of Drayton, possessed by the noble houses of Guilford and Dorset. It once contained a mansion occupied by the Greville family, but this has been long in an uninhabitable state as a mansion, though we believe a portion of it has been repaired and fitted up as a poor-house. The church of Drayton is a simple unimposing structure, principally remarkable for the tombs and relics of the noble personages who once resided in the neighbourhood.

The parish of Wroxton, in which the abbey is situated, contains only about eight hundred inhabitants. The living is a vicarage in the archdeaconry and diocese of Oxford, and in the patronage of the Marquis of Bute. The church is dedicated to All Saints, and contains monuments to two or three of the Earls of Guilford, to several other members of that family, to the first Earl of Donne, and to other distinguished personages.

Wroxton Abbey would seem, from its name, to be

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rather an ecclesiastical structure than a private mansion; but the truth is that an abbey formerly occupied the spot, and a portion of it has been built into or included in the present mansion, which retains the old name. A priory of canons regular of St. Augustin was founded here in the reign of Henry the Third, and valued at 78*l.* 13*s.* 4*d.* The buildings of this priory were destroyed by fire, and the present mansion was built on its site.

The estate came into the family of the Norths by the marriage of Francis, Lord Keeper Guilford, with Lady Frances Pope, sister of fourth and last Earl of Donne. The greater part of the present structure was erected by Sir William Pope, afterwards Earl of Donne, in the year 1618. The building is of an ornamental and interesting character, though it was not completed according to the original design, as an intended wing on the south side was never commenced. The Lord Keeper made some additions, and the late Earl of Guilford erected an elegant library, after a plan by Smirke. The chapel is a fine room, beautified by the first Earl of Guilford. Among the pictures deposited in this mansion are many ancient portraits of the families of North and Pope. Among the latter is an original of Sir Thomas Pope, founder of Trinity College, Oxford, and uncle of the first Earl of Donne. Of the Norths there is a complete series of portraits, from Edward, the first lord, created in the reign of Philip and Mary, to the present Earl of Guilford. "The whole of Wroxton Priory," says Mr. Brewer, "is creditable to the taste of the noble owner. Every improvement introduced (and many have been effected) is rendered subservient to the ancient baronial character of the edifice. The gardens and pleasure-grounds will be viewed with particular interest, as no innovating hand has robbed them of their monastic features."

The only remains of the original abbey (or priory, as it would seem to be more correctly called) are an arch, which was probably a door of entrance, and a small portion of the passages, communicating with offices in the lower division of the building.

Mr. Nash has, in one picture, represented the porch of Wroxton Abbey, which is an elegant specimen of the Italian decorated entrances, so frequently attached to buildings of this date. Another plate is devoted to the hall. This hall is handsome, though plain, and is remarkable for the screen, which is richly carved and supported on columns, leaving the space beneath the music-gallery open. The pendant in the centre of the ceiling is likewise a curious feature, and has a light and elegant effect. The stags' heads introduced into the wall are also peculiar and striking ornaments.

JEOPARD not the loss of many things for the gain of one thing; neither adventure the loss of one thing certain for many things doubtful.—SIR THOMAS SMITH.

THE heart may be sad, without the eye being wet.—LOVER.

ADVERSITY is like the period of the former and of the latter rain,—cold, comfortless, unfriendly to man and to animal; yet from that season have their birth, the flower, and the fruit, the date, the rose, and the pomegranate.—SIR WALTER SCOTT.

AFFLICTION appears to be the guide to reflection; the teacher of humility; the parent of repentance; the nurse of faith; the strengthener of patience, and the promoter of charity: while of those upon whom affliction is thus sanctified to the purifying of the soul, and its improvement in Christian graces; of those, who study to convert it with the blessing of their merciful Father, to their spiritual and eternal welfare, that they "may become partakers of his holiness;" of those who welcome it as the means whereby they may "learn the statutes" of the Lord: of such persons it may be truly affirmed, as the royal Psalmist acknowledged of himself, that "it is good for them to be afflicted."—BISHOP MANT.

HUNGARY WATER.

Doctors or Teachers they of Physick are,
(Whether by pen they do it, or in chair
With lively voyce,) that teach the way to know
Man's nature, health, and sickness, and do show
Diseases, cause, and cure: but they who spend
Their life in visits, and whose labours end
In taking fees and giving paper scrowls,
Factors of physick are, and none but owls
To court such *doctors*, that no Latin know,
From whence that name did to our language flow.

THUS wrote William Rowland, the coadjutor of Culpeper in some of his numerous works on medical subjects; and from the tone of satire in which the lines are written, the reader would naturally suppose that this Rowland was a genuine "doctor," and not a mere "factor of physick." Yet we are tempted to smile when we see what were the ideas of such men respecting the effects of medicines on the human body, and how strangely they mixed up astrology with the medical art. If we select almost any simple herb,—*rosemary* for instance,—we shall find that they attribute to it virtues which would very much gladden the hearts of invalids, could we only believe them to be true. Rosemary, Culpeper tells us, will cure, or at least "help" cold diseases, rheum, swimming of the head, drowsiness, stupidity, dumb palsy, lethargy, falling sickness, tooth-ache, bad breath, weak memory, dim sight, yellow jaundice, pestilence, cough, ptisick, consumption, benumbed joints, and a host of other personal evils, both internal and external. He also informs us that "the sun claims privilege to it, and it is under the celestial Ram."

These whimsicalities would be calculated merely to amuse, were it not that uneducated persons are often disposed, by the perusal of the works, or the popular dissemination of the opinions, of such men as Culpeper and Rowland, to form a very erroneous estimate of the comparative state of medical knowledge in past and present times. The reputed properties of any particular herb or medicament, however astounding they may be, are laid down by our old herbalists in such positive and undoubted terms, that many readers fear it would be a kind of presumption to doubt the truth of what is asserted. This is an evil, since it is difficult, and often impossible, to bring the mind into a fit state for the reception of truths recently discovered, if it is pre-occupied by doctrines which partake of the marvellous, and which are, principally on that account, eagerly caught up by the multitude.

We could easily collect numerous examples of medicinal herbs, which are now used for the most simple purposes only, but which were once lauded for curative properties almost innumerable. Some preparations, formerly much vaunted, are now utterly unknown, while others, although still admitted into the healing art, occupy a far humbler station than that which they once filled. There is a curious history respecting the subject of HUNGARY WATER, a preparation from Rosemary, which will illustrate some of the remarks offered above, and will show that persons moving even in the highest circles were once not exempt from the belief in medicines and remedies of a marvellous character.

Hungary water is spirit of wine distilled upon rosemary, and therefore imbued with its oily and strongly-scented essence. It used to be brought principally fr m France, particularly from Beaucaire, Montpellier, and other places in Languedoc, where rosemary grew in great abundance. The name by which it is known,—*l'Eau de la reine d'Hongrie*,—seems to imply that it was first known or used in Hungary, and such appears on investigation to have been the case. Several books ave been written on the subject, in which it is stated that the receipt for making this medicine was given to a queen of Hungary by a hermit, (some say by an an el,) who appeared to her in a garden, all entrance to which was shut. One writer says that this queen was Queen

St. Isabella, but another states it to have been Elizabeth, wife of Charles Robert, king of Hungary, daughter of Uladislaus II., king of Poland, and he goes on to say, that by often washing with this spirit of rosemary, she was cured of gout and lameness, at the age of seventy years; that she lived to the age of eighty, and became again so renovated in youth and beauty, through the effects of this wonderful preparation, that she was admired by the king of Poland at that time, who was then a widower, and who wished to make her his second wife.

Many indistinct allusions were made by different writers to a book, or breviary, containing a receipt, written by the queen of Hungary, in letters of gold, for the preparation of this famous medicine. But the first clear account of it was given by John Prevot, in a medical work published about two centuries ago. The substance of his information on this point was as follows:—In the year 1606, Prevot happened to see, among the books of Francis Podacather,—a man of noble family with whom he was intimate,—a very old breviary, which Podacather held in high veneration. This breviary had been given by Elizabeth, queen of Hungary, to one of the ancestors of Podacather, as a testimony of the friendship that existed between them; and at the beginning of it is the following entry, in the queen's own hand:—

I, Elizabeth, queen of Hungary, being very infirm, and much troubled with the gout, in the seventy-second year of my age, used for a year this receipt, given to me by an ancient hermit, whom I never saw before nor since, and was not only cured, but recovered my strength, and appeared to all so remarkably beautiful, that the king of Poland asked me in marriage, he being a widower and I a widow. I, however, refused him for the love of my Lord Jesus Christ, from one of whose angels I believe I received the remedy. The receipt is as follows:—

> Take of aqua vitæ, four times distilled, three parts, and of the tops and flowers of rosemary two parts: put these together in a close vessel: let them stand in a gentle heat fifty hours, and then distil them. Take one dram of this in the morning, either in your food or drink, and let your face and the diseased limb be washed with it every morning.

It renovates the strength, brightens the spirits, purifies the marrow and nerves, restores and preserves the sight, and prolongs life.

If we were to judge of this strange document, taking the tone of modern opinion as a standard, we should be inclined to doubt its authenticity; but when we consider the character of the times (about the year 1380), and the allusions made to it by so many writers, we may admit its truth, by supposing the queen to have been a woman of a vain and rather weak mind.

An account of the mode of preparing Hungary water was published by Zapata, in 1586, in his *Mirabilia, seu Secreta Medico-Chirurgica**. The writer commences by alluding to the wonderful cures performed on one Anaxagoras by the use of this Hungary water, and then describes the mode in which it was prepared by Arnold of Villa Nova:—"Take some good must, such as yields a ley of his own accord, before the grapes are bruised. Put it into a vessel, and add the sprouts and leaves of rosemary, of each ten parts; and when it has steeped in spirit, let it be shut up in a perforated vessel, in order that it may effervesce, and extract the virtues of the rosemary. When the process has been thus far conducted, let some more must and rosemary be put into a glass cucurbit, and distilled five times: when it boils let the result of the fifth distillation be drawn out; and after it shall have been distilled in the other vessel of must and rosemary, (in which fermentation has been going on,) both are to be added together. Then add a small quantity of the fifth distillation, or *quintessence*, so that the must may be developed from it more frequently and efficaciously. . . . ." It must be confessed that a modern practitioner would be somewhat perplexed to have to produce Hungary water by such a description as this.

* This was a book which treated of "the wonders or secrets of the medical and surgical profession."

The time has now gone by when Hungary water was deemed a specific against severe diseases; and it has taken its rank among the simpler preparations from vegetable bodies. In preparing this liquid, the leaves and tops of the rosemary yield their fragrance, in a great degree, to the ardent spirit, leaving behind the greatest share both of their flavour and pungency. The mode of preparing it usually adopted is, by distilling one gallon of proof spirit of wine, in which a pound and a half of fresh rosemary-tops have been placed. In order to make it in perfection, the spirit must be very pure, and the leaves at their full growth, gathered without bruising. If the flowers are suspended in the retort, and a gentle heat applied, just sufficient to raise the spirit in the form of vapour, this vapour, by lightly percolating through them, is said thereby to increase the fragrance. The custom used to be, in order to produce Hungary water of the finest kind, to distil the spirit several times with the rosemary; but the commoner sorts were often nothing more than cheap brandy, with a little of the essence or the oil of rosemary added to it.

Hungary water is now regarded as nothing more than an agreeable perfume, possessing nearly the same qualities as the simple herb from which it is produced. The wondrous properties attributed to this liquid by the queen of Hungary, as well as the equally marvellous virtues attributed to rosemary itself by the herbalists, are now known to have had their chief foundation in the operation of the human mind. The gradual developement of truth makes sad havoc in glowing and highly-coloured descriptions, whether of medicinal cures or of any other subject in which the public is deeply interested.

An article has appeared in some of the daily journals, in which the volcano of Kiraueh, (there called Kireca,) in the island of Hawaii, or Owhyhee, is spoken of as a newly formed crater. It was, however, visited many years since by Mr. Ellis; and the following account given by Mr. Douglas, corresponds so closely with its present state, as recently laid before the Geographical Society, that it may not be uninteresting to our readers.

THE VOLCANO OF OWHYHEE.

THE late Mr. Douglas, who visited Kiraueh in 1833, has described the scene presented by the interior of its crater as singularly awful and magnificent. He descended to a ledge at the depth of 1062 feet in this fearful pit; where a space about five miles in diameter, was covered with lava, the whole of which had apparently been recently in a state of fusion, though some portion was at that period hardened. This igneous mass appeared, in the process of cooling, to have been rent into pieces of every form and size, from gigantic rolls, like enormous cables, to the finest threads. Over this part of the pit were dispersed numerous small cones, or chimneys, which continually emitted smoke; and besides these little cones there were three remarkable pyramidal masses, measuring about 900 feet at the base, and being from 20 to 25 feet in height. These cones had lateral openings, like the doors of a baker's oven, to which they altogether bore a close resemblance. By kneeling down on the ledge it was possible to peep into these openings, and to witness "a terrific vacuity, a red-hot atmosphere," varied only by the occasional ejection of volcanic matter through a lateral opening. The remaining portion of this pit consisted of two lakes of liquid lava: one about 900 feet in diameter, and the other above 3000 feet in length, and nearly 2000 feet in width. Both these lakes of fire flowed in a continued stream towards the south end of the pit, at which point was exhibited one of the most appalling and magnificent spectacles in nature,—a vast cauldron of lava, in furious ebullition, rolling and tumbling in fiery waves, sometimes spouting up to the height of 60 or 70 feet, and rapidly hurrying along, until it precipitated itself through an arch about 400 feet in width, and 40 feet in height, into a yawning chasm of unknown depth. From this tremendous, but unseen, laboratory of nature, immense masses were thrown back with great violence, and literally spun into minute glass-like filaments, which were carried by the wind in all directions. The sound issuing from this archway baffles all description: "that of the whole steam-engines in the world," says Mr. Douglas, "would be a whisper to it."—MISS ZORNLIN'S *Recreations in Physical Geography.*

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TURKEY AND THE TURKISH PROVINCES

THE TOWN OF JOANNINA.

THE Turkish government has many peculiarities that distinguish it from European states, and foremost of these is the administration of its provinces by means of Pachas. This institution, though in its principle perhaps not very different from that of the suzerainties of the feudal system, presents such a systematic course of extortion, bribery, and rebellion, and is, as a whole, so little like anything that the history of Christendom offers to our notice, that it is of itself sufficient to impress upon the country a distinct character, and without some acquaintance with the system, any account of Turkey must be but imperfectly comprehended. We accordingly furnish a sketch of the career of a Turkish pacha, the substance of which we borrow from Colonel Napier.

The Sultan, seldom removing from Constantinople, is there surrounded by a cabinet, termed the Divan, which appoints as the governor of a distant province, that one among the numerous class of the Sultan's personal attendants, who either bribes, or promises to bribe, them most largely. The government is sometimes not even vacant when the post is sold, but should the pacha have become obnoxious to the sultan or his government, a messenger is despatched to bowstring him and bring his head to Constantinople; this, if the governor be weak or taken by surprise, is often accomplished without difficulty: but in other cases, the messenger is waylaid and murdered, and the event only serves to wring a bribe from the intended victim. The purchaser then has to wait an indefinite time till further steps are taken, which he very patiently does, well-knowing that the bowstring would be the reward of any other conduct.

When he at length gains possession, his first measure is to solve what is said to be the grand problem of Turkish government, namely, how far he may plunder his subjects without occasioning a rebellion too formidable for him to put down. This point settled, his tribute remitted, and his promised bribes to the Divan punctually paid, with a handsome additional sum as a retaining fee, the new pacha is generally allowed to go on peaceably, as far as regards the Porte, for a few years. Then similar means to those tnat procured his rise are employed to work his downfall. His subjects have from the first preferred complaints against him, and now that he is presumed to be rich, these are regarded. His government is in the market, and he, aware of the fact, endeavours to meet the danger by bribing more largely than before. At length, having reached the point of endurance, he atttempts to conciliate his people by relaxing somewhat of his extortions; and these, knowing that the arrival of a new governor is invariably followed by greater oppression than ever, are sometimes induced to make common cause with him. His bribes now become less than before; his government is sold, and a messenger despatched for his head, who, however, not unfrequently loses his own. Next comes the new pacha, with an army, if he can raise one; and then follows a war, which usually ends by one party outwitting the other, and putting him to death, with circumstances of treachery and cruelty of which European readers can form no adequate conception.

This matter premised, we may now proceed to the description of Joannina, once the capital of Ali Pacha, whose eventful life, of which we may one day give a sketch, well exhibits the blood-stained and checkered career of a Turkish governor.

THE PASHALIC OF JOANNINA.

JOANNINA is the chief town in a pashalic of the same name, situated in Albania, a province near the north-west boundary of European Turkey. It owes nearly all the celebrity which it has attained, to the power and influence of Ali Pacha, who made it his residence. The town is not far from the eastern shore of the Adriatic, and is in the immediate vicinity of some of the Ionian Islands.

At a distance of about sixty miles north-west of the Morea, a small gulf branches out from the Adriatic, called the Gulf of Arta; at the entrance of which is a commercial town of some importance, called Prevesa. Forty miles northward of Prevesa stands the town of Joannina, the approach to which, from the south, is

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described by travellers as being very beautiful. Dr. Holland thus describes the scene which presents itself, when the traveller has approached within two miles of the city.

A large lake spreads its waters along the base of a lofty and precipitous mountain, which forms the first ridge of Pindus, on this side, and which, as I had afterwards reason to believe, attains an elevation of more than 2500 feet above the level of the plain. Opposed to the highest summit of this mountain, and to a small island which lies at its base, a peninsula stretches forward into the lake from its western shore, terminated by a perpendicular face of rock. This peninsula forms the fortress of Joannina; a lofty wall is its barrier on the land side; the waters which lie around its outer cliffs, reflect from their surface the irregular, yet splendid outline of a Turkish seraglio, and the domes and minarets of two Turkish mosques, environed by ancient cypresses. The eye, receding backwards from the fortress of the peninsula, reposes upon the whole extent of the city, as it stretches along the western borders of the lake:—repose, indeed, it may be called, since both the reality and the fancy combine, in giving to the scenery the character of a vast and beautiful picture, spread out before the sight.

The length of the lake, on the borders of which the town of Joannina is situated, is about six miles, and its greatest breadth two; but at the point where the peninsula juts out into the lake, the breadth of the latter is very small. The city extends along the greater part of the western shore of the lake, and stretches, in width, from the lake to a row of low eminences, about a mile and a half distant from it. The interior aspect of the town is said to be rather gloomy, except at some particular spots. The streets are very tortuous, so as to give a stranger a great deal of embarrassment in reaching any destined part of the town; and those in which the lowest classes of the inhabitants dwell, contain little but wretched mud-built cottages, and are in the outskirts of the city. The habitations of the middle ranks make a nearer approach to comfort, being constructed of wood, with a small open gallery under the projecting roof; altogether dissimilar to the cottages of Switzerland. The dwellings of the higher classes, both Greeks and Turks, partake more of an Oriental character, being quadrangular structures surrounding an open court, and having wide galleries running round the sides: the construction of these houses is such as to be extremely convenient in a warm climate; but, externally, they have more the appearance of prisons than of houses, for they present little more to the eye than lofty walls, with massive double gates, and windows (if any) at the top of the building.

The bazaars form, in Joannina, as well as in other Turkish towns, the most bustling and attractive feature in the place. They consist of ten or twelve streets, intersecting each other at irregular angles: they are narrow, and are rendered rather dark by the low projecting roofs, and by the large wooden booths in which the goods are exposed for sale. Each bazaar is appropriated to the sale of one particular class of goods; for instance, there is one occupied by those who deal in jewellery, and other ornamental articles; a second, by the dealers in pelisses, Turkish shawls, and other articles of dress; a third, by the retailers of common cotton goods; a fourth, by the dealers in grocery, tobacco, dried fruits, &c.; a fifth, by those who sell hookah and Meerschaum pipes, wooden trinkets, &c.; a sixth, by the dealers in coloured leather, and Turkish slippers; and one or two others. Some of these bazaars, especially those in which jewellery and articles of dress are sold, are richly and abundantly furnished.

Joannina contains sixteen mosques, each standing on an open space of ground, and generally surrounded by large cypresses. There are also about seven or eight Greek churches, Joannina being the seat of a Greek archbishop.

The seraglios, or palaces of the pacha, are very large and important buildings. The chief one is lofty in itself, and situated on the most lofty spot in the city: it is principally built of wood, but is supported and surrounded by high and massive stone walls, on different parts of which cannon are mounted. The palace itself is built entirely in the Turkish style, with roofs projecting far beyond the face of the building; windows disposed in long rows underneath; and walls richly decorated with paintings, occasionally landscape, but more generally what is merely ornamental, and without any uniform design. The entrance to the seraglio is very mean, being under a broad wooden gateway, within which is a large irregular area, two sides of which are formed by the buildings of the seraglio. On crossing this area, a dark stone staircase leads to an outer hall, from which an entrance leads into a long and lofty apartment, contiguous to the audience chamber of the pacha. This last mentioned apartment is decorated in a somewhat gaudy style, the prevailing colours, as well of the walls and ceiling as of the furniture, being crimson, blue, and yellow. The ceiling is divided into squares by woodwork very curiously and delicately carved, the interior of each square being decorated in crimson and gold. Pilasters are arranged at equal distances round the walls, and on these are hung sabres, daggers, pistols, &c., all profusely ornamented with gold and jewels. A carpet covers the floor; and round three sides of the room are ranged *divans*, or platforms, about fifteen inches high, and covered with cushions of crimson satin. A hearth, for burning wood fuel, is situated at one side of the room, and over it is a projecting chimney, rising in the form of a conical canopy, superbly ornamented with gilding. This description of the style of decoration in the audience chamber, will serve to convey a general idea of all the state apartments, in which a strange mixture of gaudiness and barbarity is observable, but very little real taste.

Perhaps the most beautiful structure in the town is the pavilion of the pacha, situated in the northern suburb. This pavilion is in the middle of a garden, and consists of a great saloon, two hundred and forty feet in circumference: its outline is not a perfect circle, but is formed by the curves of four separate areas or recesses, which are all open to the great circular area that occupies the centre of the building. The curve of each recess contains nine windows; and there are two also at the entrance into the pavilion. The pavement is of marble, with a large and deep marble basin in its centre: in the midst of this basin stands the model of a pyramidal fortress, mounted with numerous cannon, from each of which a *jet d'eau* issues, meeting the other jets from cannon on the outer circumference of the basin. Attached to one of the pillars of the pavilion is a small organ, which plays while the water is flowing.

The peninsula, of which we have before spoken, widens as it advances into the lake, and is terminated by two distinct promontories of rock; on one of which stands a large Turkish mosque, its lofty minaret, and extensive piazzas, shaded by the cypresses surrounding it. On the other promontory is situated the old seraglio of the pachas of Joannina, inhabited by them previous to the erection of the one which we have described, but now chiefly inhabited by officers and soldiers of the pacha's guard The whole of the peninsula is fortified, so as to form a little town in itself, insulated from the rest of the city by a lofty stone wall, and a broad moat which admits the waters of the lake.

The banks of the lake are studded with numerous objects of a picturesque nature, such as the Great Seraglio, which seems to rise directly from the shore; a painted kiosk, projecting over the water, below the rocks of the old seraglio; a convent of dervishes, shaded by trees, towards the north. But the most attractive object is one which owes nothing to the hand of man, viz., the mountain ridge which backs the city, and which rises to a height of nearly three thousand feet: this range forms a continuous boundary to the valley in which the lake is

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situated, rising from the water's edge, in the part opposite to Joannina, with an abruptness and majesty of outline which has much of the sublime in it: its precipitous front is intersected by the ravines of mountain torrents, the borders of which, expanding as they approach the lake, are covered with wood, and form the shelter to many small villages.

The lake is rather inconsiderable in depth, and is terminated at each extremity by low marshy land; there is an outlet towards the north, by which the water of the lake flows to another small lake about six miles distant from the city. The water which thus flows from one lake to the other, after having passed through the second lake, suddenly enters a subterranean passage underneath some limestone hills, and appears again at a considerable distance. The supply of water to both lakes, is derived from springs, and from the various mountain torrents which descend into them.

There is a considerable amount of trade carried on at Joannina. The chief article of importation, is cloth of French and German manufacture: this reaches them by way of Leipsic, and the demand for it is very considerable, since all the rich Greeks and Turks, not only in Albania, but also in parts of Roumelia, and the Morea, purchase at Joannina the cloth for their loose robes and winter pelisses. Within the last few years, English cloths have also found a market at this place. The articles of exportation are, oil, wool, corn, and tobacco, for the Italian ports; and for inland circulation, through Albania and Roumelia, spun cottons, stocks of guns and pistols mounted in chased silver, embroidered velvets, stuffs, and cloths. Large flocks of sheep and goats, and droves of cattle and horses, are collected from the Albanian hills, and sold at an annual fair held near the town: the horses are generally sold again to inhabitants of Albania; but the cattle, sheep, and goats, usually go to the Ionian Islands.

In concluding this slight description of Joannina, we must remark that the town was the scene of many desperate conflicts between the Turks and the Albanians, during the latter part of the life of Ali Pacha, and that these contests have probably made some alterations in the buildings and arrangement of the town; but as there have been very few recent travellers to that part of Turkey, we are not exactly in a position to state what these changes or alterations may have been. Everything relating to the natural beauties of the spot, must, however, be nearly or quite the same as they were before, whatever be the turmoils and strifes of ambitious men: the palaces and houses made by men, may be destroyed by them; but the mountains and valleys remain, enduring witnesses of the power of the Great Creator who formed them.

Love of Home.—Whatever strengthens our attachments is favourable both to individual and national character. Our home,—our birth-place,—our native land! Think for a while what the virtues are which arise out of the feelings connected with these words; and if thou hadst any intellectual eyes, thou wilt then perceive the connection between topography and patriotism. Show me a man who cares no more for one place than another, and I will show you in the same person one who loves nothing but himself. Beware of those who are homeless by choice! You have no hold on a human being whose affections are without a tap-root. Vagabond and rogue are convertible terms; and with how much propriety, any one may understand who knows what are the habits of the wandering classes, such as gipsies, tinkers, and potters.—*The Doctor.*

The history of creation is, itself, the history of God's government; and nothing short of absolute idiotism, rather than mere ignorance, could believe it possible that this incalculably complicated, multifarious, and inconceivably extended universe, could preserve its order without a government.—Macculloch.

ON CHESS.

I. Origin and Antiquity of the Game.

The origin of the game of Chess has been the subject of very laborious research and warm argument; and, although the results are by no means satisfactory, yet the inquiry has afforded a good deal of valuable and amusing information; a selection from which will probably be interesting to the general reader, as well as to the amateurs of this noble and scientific game.

Some historians have referred the invention of chess to the philosopher Xerxes; others to the Grecian prince Palamedes; some to the brothers Lydo and Tyrrhene; and others, again, to the Egyptians. The Chinese, the Hindoos, and the Persians, also prefer their claims to be considered as the originators of chess, but the testimonies of writers, in general, prove nothing except the very remote antiquity of the game.

In examining the testimonies of various writers, on a subject so obscure, we must always make considerable allowance for that prejudice in favour of certain opinions which habit and local circumstances apart from sound reasoning have tended to confirm. Thus, a historian who has passed much of his time in India, studying the manners and customs of the native tribes, tracing out their history, translating their legends, and copying their monuments, would almost unconsciously support against any other, the claims of such a people to any remarkable invention. The same remark applies to the historian of the Chinese, of the Egyptians, of the Greeks, and other ancient nations; and, accordingly, we find that each of these nations has its advocate in English literature.

The first writer that we shall mention, is Mr. James Christie, who has written a quarto volume, entitled, *An Inquiry into the Ancient Greek Game, supposed to have been invented by Palamedes, antecedent to the Siege of Troy.* It is, however, generally agreed that the claims of the ancient Greeks to the invention are unfounded. Palamedes lived during the Trojan war, and was so renowned for his sagacity, that almost every early discovery was ascribed to him. The whole of the claim of Palamedes rests upon the definition of the game of pebbles, *πετρεια*, as played by the Greeks. This game was played with white and black pebbles, and was invented by Palamedes, as appears by a line in the first book of Homer's *Odyssey.*

The claim of the Romans is equally unfounded: a game, something like dice, is spoken of by their writers, which has been mistaken for chess.

Mr. Irwin, in a letter to the Earl of Charlemont, published in the *Transactions of the Royal Irish Academy,* supports the claims of the Chinese, in whose *Concum,* or Annals, appears the following passage:

Three hundred and seventy-nine years after the time of Confucius, or 1965 years ago, Hung-cochu, king of Kiang-nan, sent an expedition into the Shen-si country, under the command of a mandarin, called Han-sing, to conquer it. After one successful campaign, the soldiers were put into winter quarters; where, finding the weather much colder than what they had been accustomed to, and being also deprived of their wives and families, the army, in general, became impatient of their situation, and clamorous to return home. Han-sing, upon this, revolved in his mind the bad consequences of complying with their wishes. The necessity of soothing his troops, and reconciling them to their position, appeared urgent, in order to finish his operations in the ensuing year. He was a man of genius, as well as a good soldier; and, having contemplated some time on the subject, he invented the game of chess, as well for an amusement to his men, in their vacant hours, as to inflame their military ardour,—the game being wholly founded on the principles of war. The stratagem succeeded to his wish. The soldiery were delighted with the game; and forgot, in their daily contests for victory, the inconveniences of their post. In the spring, the general took the field again; and in a few months, added the rich country of Shen-si to the kingdom of Kiang-nan. Hung-cochu assumed the title of emperor, and Chou-payuen put an end to his life in despair.

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THE

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ON ANCIENT CRYPTS

CRYPT IN LASTINGHAM CHURCH, YORKSHIRE.

In details relating to architecture, we meet with frequent mention of a portion of an ecclesiastical edifice called the *Crypt*. This name appears to have varied somewhat in its application; for several of the places which we now call crypts, differ in some respects from those which in former times bore that name. Generally speaking, however, we may say that a crypt (the Greek word signifies a place of *concealment*) is a subterraneous vault, or chapel, constructed beneath the high altar, or eastern end of many cathedral, abbey, and collegiate churches, for preserving the bodies of martyrs and holy persons, and for the performance of Divine Worship.

Catacombs, or subterraneous places, used among the ancients for the burial of their dead, were resorted to by the primitive Christians as places of security from their persecutors, and this, doubtless, from the knowledge that such receptacles were deemed sacred and inviolable, and might therefore be expected to afford them a sure retreat. Some authors have maintained the strange idea that the Christians themselves were the excavators of the catacombs; but the vast extent of these subterranean galleries, as they exist at Rome, Naples, Syracuse, &c., and the inability of the persecuted flock to carry on such undertakings, have only to be considered, to make this opinion appear very extravagant and absurd.

Doubtless, the Christians took these catacombs, as they naturally presented themselves as places of retreat: they became their places of abode, their churches, and their burial-places; and around the tombs of the earlier saints and martyrs, there deposited, they met together, to encourage each other in their holy faith, and to perform the rites of their religion. When the persecution ceased, and they were no longer obliged to hide themselves from the malice of enemies, but were at liberty to raise public edifices for the performance of Divine Worship, they naturally chose out such situations for this purpose as should mark the remains of their martyred relatives or friends which lay beneath; and gradually as these remains came to be considered as endowed with peculiar sanctity, it became the rule never to consecrate an altar till the remains of some saint were placed within its bosom, or under its base. When churches were required at places distant from the catacombs, similar excavations, but smaller in extent, were made beneath the altars, and relics transferred to them. The excavation just alluded to was the crypt, or vault, which was partly raised above the level of the floor, and partly sunk beneath it. The descent to the crypt was by a number of steps in the nave, or transept, and other steps ascended from it to that part of the sanctuary immediately over the crypt. The contents of the crypt were seen from above, through grated apertures; and over the tomb of the saint was placed the altar. These crypts were likewise furnished with all the requisites for wor-

ship; and in the writings of William Thorn, the monk of Canterbury, mention is made of a particular collect to be said in the service performed in crypts. Thus the crypt, as well as being the depository of the bodies or limbs of departed saints (for where the whole body could not be obtained, a limb was regarded by the devotees with almost equal reverence), was also a sort of subterraneous church or chapel, and, according to the reputation for sanctity borne by the person whose remains it enclosed, was thronged with worshippers, and honoured with exterior embellishments in the grandeur of the edifice raised above it. The church of San Martino, at Rome, was raised in the year 500, by Pope Symmachus, over a subterraneous chapel, or crypt, which contained the body of Pope Sylvester; and St. Peter's, at Rome, was built above the crypt of the martyrs that suffered in the circus of Nero.

Crypts are also found unconnected with any religious edifice; but forming in themselves both temple and tomb. About a quarter of a mile northward of Laodicea, in Syria, are several such crypts, or sepulchral chambers, hollowed in the rocky ground, and varying from ten to thirty feet square. In most of these crypts there is a range of narrow cells, each large enough to receive one coffin in width, and two or three in length. In one crypt, named after St. Teckla, is a fountain, to which the Greek Christians used to bring diseased persons, for the anticipated recovery of their health, by ablution in the fountain. Jerusalem and its neighbourhood contains many crypts, in which are stone benches, instead of cells, for the reception of coffins. How far sepulchres of this kind were in use in Syria, before the Christian era, is uncertain; but the sepulchre in which our Saviour was laid is described by the Evangelists as being hewn out of a solid rock; and, from the circumstance that Mary and John had to stoop down, in order to look into the sepulchre, we may infer that the sepulchre was below the level of the ground. There are many sepulchres in and around the Mount of Olives, which appear to have been used as burial-places for holy persons.

This custom of placing the last earthly remains of inspired or holy men apart from those of other persons, was adopted by the Church of Rome; but with many of those debasing and irreligious infringements which that church made in the middle ages, and by which the Romish Calendar became crowded with saints of human creation. When the Gothic cathedrals of Europe were built, the construction of a crypt, probably for some such purpose as we have indicated, was very common; and among them are the crypts beneath Canterbury, York, and Winchester Cathedrals, and those beneath the churches of Grimbald, Christ Church, Wimburn, Dorchester, Grantham, Peterborough, Waverley, Wells, &c.

In Protestant countries the crypts are seldom now used, either for sepulchres or for chapels; indeed so long have most of them been disused, that many writers are in doubt whether they were originally designed for sepulchres or for chapels. In Buildwas Abbey Church, Shropshire, there is a crypt, beneath the north transept, extending the whole length of the transept from east to west, and about half its width from north to south. The principal entrance to this crypt was at the west end, by a flight of steps out of the cloister; and there seems to have been also a doorway in the northern wall of the crypt. This subterranean vault, whatever may have been its original destination, has long been used as a cellar.

Canterbury Cathedral contains a vast vault, or rather series of vaults, which is called the crypt, or undercroft, and which is supported by numerous piers and massive columns. This crypt, if such be its real nature, appears to be much larger than the generality of such vaults.

Other crypts, as we have said, are to be found beneath many cathedrals and ancient churches; but it will be sufficient for us here briefly to notice that which is represented in the wood-cut at the head of this article, and which is the crypt beneath the ancient church of Lastingham, in the north riding of Yorkshire.

Lastingham Church is situated about five miles from Kirby Moorside, in the mountainous part of the north riding, and is so ancient that great diversity of opinion exists as to many points connected with its history. According to Bede, a small monastery was founded on this spot by Bishop Cedd, during the time of the Heptarchy, both as a place of worship and as a sepulchre. When the bishop died, he was buried on the outside of the monastery; but in process of time a stone church was built in the monastery, and the body of the prelate was buried at the right-hand side of the altar.

During the two centuries which immediately preceded the Norman conquest of England, very little is known of Lastingham Monastery; but it is supposed to have been ruined and destroyed during the Danish wars of those times. We find that in 1078 Lastingham was included in the royal demesne, and that Stephen, abbot of Whitby, solicited permission to establish a new monastery at Lastingham, on account of the exposure of Whitby Abbey to pirates and robbers. From that time scarcely anything is known of Lastingham Monastery or Church. The latter became a parochial church at some subsequent period, but at what time is not now known.

The crypt underneath this church has by many persons been supposed to be of Saxon construction, the remnant of the monastic church built before the Conquest; but Mr. Britton considers it to be a specimen of the early Norman style, and to have formed part of the monastery built by the abbot of Whitby, after his removal to Lastingham, since it corresponds with other known crypts of the Norman age, in the massive character, forms and ornaments of the columns, and the simplicity of the groining and arches. The crypt is about forty-one feet in length, from east to west, and twenty-two in width, from north to south. The present entrance descends by a trap-door and flight of steps from the west end of the nave of the church; but there was formerly another entrance from a vaulted passage on the north side, which was traditionally reported to have extended to a distance of two or three miles from the church, underground. On entering the crypt, however, by the present entrance, at the west end, we come to a square vault, measuring about twenty-one feet each way, the roof being supported by four massive columns, nearly equidistant. On the eastern side of this square portion, and close to the north and south walls, are two loop-holes, which serve for windows. Between these loop-holes is an opening leading to another portion of the vault, nearly semi-circular, and measuring about eighteen feet by thirteen. At the eastern extremity of this portion, and of the whole vault, is another loop-hole, serving to admit a dim light to the crypt.

The sight of this and similar structures may well serve to recal to our minds the period and the sufferings which first made it necessary for those who bore the name of Christ to seek for subterraneous places of worship; nor can we do this without remembering our own superior privileges, and the reason we have gratefully to follow the faith of those who witnessed a good confession in the midst of so many difficulties, and at a time when, to use the language of our homilies, "They had but low poore conventicles, and simple oratories, yea, caves under the ground, called *cryptæ*, where they for feare of persecution assembled secretly together."

CHRISTIANITY recommends itself to us at first sight by this peculiar presumption of its being the true religion, that it makes application to men as reasonable creatures, and claims our assent on account of the proofs which it offers.—ARCHBISHOP SECKER.

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CALCULATING MACHINES.

I. Napier's Bones.—The Ancient Abacus.

A large portion of those labours to which the human mind is directed, have for their object the more speedy attainment of something which can already be attained by slow means: what we term a new invention, a new process, or a new art, is not always a means of doing something which could *not* be effected before, or without it, but is oftentimes only an improvement by which a given object can be attained better and more speedily. The same, to a certain extent, may be said of the processes of arithmetic: multiplication is not a totally different process from addition,—it is not, therefore, a means of effecting that which could not be effected without it, but it is a *speedier* means of effecting that which is within the scope of addition. When we multiply 12 by 8, we in effect add up 12 eight times; but, by the aid of the multiplication table, we lose sight of the process of addition, and at once conclude that 12 multiplied by 8 equals 96. So, likewise, division is but a speedier kind of subtraction; for, if we have to divide 24 by 6, we in effect subtract 6 four times over, by which we separate 24 into four parcels of 6 each.

To one who has the multiplication table committed to memory, the performance of this process is as easy as that of addition; but, where this is not the case, the process of multiplication becomes rather tedious, as our forefathers 200 years ago very generally felt it to be: they were not then taught from infancy the multiplication table, up to 12 times 12, any more than we now commonly learn it beyond that step.

It was, therefore, to afford them aid that the celebrated Napier, the inventor of Logarithms, devised the little instrument, or series of instruments, known as "Napier's rods," or "Napier's bones;" the mode of constructing which is as follows:—Provide several slips of card, wood, or metal, about nine times as long as they are broad; and divide each of them into 9 equal squares. Inscribe at the top square of each slip one of the numbers of the natural series, 1, 2, 3, 4, &c., to 9 inclusive. Then divide each of the remaining squares into two parts by a diagonal line drawn from the upper right hand corner to the lower left hand corner; and inscribe in each of these triangular divisions, proceeding downwards, the double, triple, quadruple, &c., of the number inscribed at the top; taking care, when the multiple consists of only one figure, to place it in the lower triangle, and when it consists of two, to place the units' figure in the lower triangle, and the ten's in the upper one. It will be necessary to have one of these slips or rods, the squares of which are not divided by a diagonal, but inscribed with the natural numbers from 1 to 9: this one is called the *index*-rod. It will be proper also to have several slips of each kind, so that there may be one for each particular figure.

The rods being prepared, let us trace the process of multiplying, for instance, the number 6785399. Arrange seven of the rods or slips inscribed at the top with the figures close to each other, and apply to them on the left hand the index-rod. The arrangement will then be as in the annexed figure, a little inspection of which will show that we have a table of all the multiples of each figure in the multiplicand; and scarcely anything more will be necessary than to transcribe them. Thus, for example, to multiply the above number by 6: looking for 6 on the index-rod, and opposite to it in the first square on the right hand, we find 54: write down the 4 found in the lower triangle, and add the 5 in the upper one to the 4 in the lower triangle of the next square on the left, which makes 9: write down the 9, and then add the 5 in the upper triangle of that square to the 8 in the lower triangle of the next one to the left. Proceed in this manner, taking care to carry as in common addition; and we shall find the result to be 40712394, or the product of 6785399 multiplied by 6.

1	6	7	8	5	3	9	9
2	1/2	1/4	1/6	1/0	0/6	1/8	1/8
3	1/8	2/1	2/4	1/5	0/9	2/7	2/7
4	2/4	2/8	3/2	2/0	1/2	3/6	3/6
5	3/0	3/5	4/0	2/5	1/5	4/5	4/5
6	3/6	4/2	4/8	3/0	1/8	5/4	5/4
7	4/2	4/9	5/6	3/5	2/1	6/3	6/3
8	4/8	5/6	6/4	4/0	2/4	7/2	7/2
9	5/4	6/3	7/2	4/5	2/7	8/1	8/1

NAPIER'S RODS OR BONES.

A little reflection will show that the same instrument would be available for a larger multiplier. Suppose that the same multiplicand is to be multiplied by 839938. Write down the multiplicand and the multiplier below it, in the usual manner; and as the first figure of the multiplier is 8, look for it in the index-rod, and by adding the different figures in the triangles of the horizontal column opposite to it, the result will be 54283192, or the product of the above number by 8. Then find the result of the figures in the horizontal column opposite to 3, and write the sum down as before, but carrying it one place farther to the left. Continue in this manner, until all the figures of the multiplier have been used; and if the several partial products be then added as usual, the total product, 5699314465262, will be the same as that resulting from common multiplication.

Thus it will be seen that the process of multiplication, as performed by Napier's rods, is nothing more than a series of additions; so that a person totally ignorant of multiplication may perform processes coming under that rule. The rods may also be made occasionally serviceable in shortening the process of division, especially when large sums are to be often divided by the same division. Thus: if the number 1492992 is to be divided by 432, and if the same division were frequently to occur, construct, in the manner before described, a table of the multiples of 432 by all the units.

1 times	432	= 432
2 "	"	= 864
3 "	"	=1296
4 "	"	=1728
5 "	"	=2160
6 "	"	=2592
7 "	"	=3024
8 "	"	=3456
9 "	"	=3888

```
432)1492992(3456
   1296
   ----
    1969
    1728
    ----
     2419
     2160
     ----
      2592
      2592
      ----
       ...
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Since 432 is not contained in the first three figures of the dividend, some multiple of it must be contained in the first four figures, viz., 1492. To find this multiple, look at the table, where it will be seen that the next less multiple of 432 is 1296, which stands opposite to 3. Write down 3 in the quotient, and 1296 under 1492; then subtract the former from the latter, and there will remain 196, to which if the next figure of the dividend be brought down, the result will be 1969. Again referring to the table, we find that 1728, which stands

opposite to 4, is the greatest multiple of 432 contained in 1969: write down 4 therefore in the quotient, and subtract as before. By continuing the operation in this manner, it will be found that the other figures of the quotient are 5 and 6, and that there is no remainder.—We will here again remind the reader, that he must not test the excellence of such an expedient as this by the present state of knowledge on arithmetical subjects, but by the wants of society at the time when Napier lived, more than two hundred years ago.

A mechanical contrivance for facilitating the processes of arithmetic to uneducated persons, under the name of the ABACUS, has been known in various countries for a long period. The principle of the instrument is, to express numbers by the relative position of beads sliding upon wires, or of counters placed between lines. The Chinese abacus, called *shwan-pan*, consists of several series of beads strung on brass wires, stretched from the top to the bottom of the instrument, and divided in the middle by a cross-piece from side to side. In the upper space every string has two beads, which are each counted for 5, and in the lower space every string has five beads, of different values, the first being counted as 1, the second as 10, the third as 100, &c. This apparatus is commonly used in the shops of China, and the natives are very expert in the working of it. The Grecian abacus was nearly the same as that of the Chinese, except that little ivory balls were used instead of beads. The Roman abacus differed a little from the Grecian, in having pins sliding in grooves, instead of beads or balls sliding on wires. The abacus used at the present day in some European countries is made as follows:—small counters are provided, and a sheet of paper is ruled with parallel lines, each two being at such a distance as may be at least equal to twice the diameter of the counter. Then the value of the lines thus drawn, and of the spaces between them, increases from the lowest to the highest in a tenfold proportion: thus:—counters placed upon the first line signify so many units or ones; on the second line, tens; on the third line, hundreds; on the fourth line, thousands; and so on. In like manner, a counter placed in the first space, between the first and second lines, denotes 5; on the space next above it, 50; on the third space, 500, on the fourth space, 5000; and so on. So that there are never more than four counters placed on any line, nor more than one in any space; this being of the same value as five counters on the next line below. Thus, 47382 is indicated in this manner:—two counters on the lower line implying units 2; three on the second line, and one in the space above it, indicating conjointly 80; 3 on the third line, for 300; 2 on the fourth line, and 1 in the space above it, for 7000; and 4 on the fifth line for 40,000.

Numerous contrivances have been from time to time introduced, bearing resemblance more or less to the abacus, or to Napier's rods. Mr. Gamaliel Smethurst, in the forty-sixth volume of the *Philosophical Transactions*, described a variation of the Chinese shwan-pan, which appeared to him to increase its usefulness; for besides teaching arithmetic to persons ignorant of it, he deemed it useful "to examine accounts by; for, as the person will, by the shwan-pan, work it in quite a different way, it will serve as if another person had gone through the account; if it proves right with the written one, they may rest assured the work is true." Many other individuals have likewise directed their attention to this subject. Sir Samuel Moreland published, in 1673, an account of two arithmetical machines, the construction of which however, he did not explain. Leibnitz, Poleni, Perrault, Lespine, Boistissandeau, and others devised machines, having a similar object in view. As there is a good deal of similarity between many of these contrivances, we will not stay to describe them, but will, in another article, speak of the ingenious means by which Dr. Saunderson, the blind mathematician, established a kind of palpable arithmetic; and also of a calculating machine invented by Pascal.

The reader should know that the words "calculate" and "calculation" are derived from the Latin word *calculus*, a counter, or pebble: hence, among the Romans, accountants were called *calculatores*.

THE BURNT PILLAR AT CONSTANTINOPLE.

VARIOUS writers have described a remarkable column standing in the city of Constantinople, but I have not found two that give the same account of it. In order to describe it as I found it, I must differ from them all. It is situated in one of the principal streets of Stamboul, (Constantinople,) near the Chatladi gate, and is said to have derived its modern name from having been burnt by fire. There is a story current, both among the Franks and Turks, that some Jews burnt it, and melted the gold plates with which it is said to have been covered; but the story, though universally believed, is not worthy of the slightest credit, as nothing like authority or date can be given for it. Hobhouse says it is called the Burnt Pillar from its burnt appearance, and certainly to a casual observer it does appear as if it had been burnt by fire; yet, on a close and careful examination, I could not find one vestige of fire ever having touched it; in fact it owes its black and burnt appearance to time and the elements. The first time I visited it, there were houses built on two sides of it; the other two were open, and dug round for the purpose of building: and on my second visit, a few months after, I found a new and elegant white stone guard-house, giving to its base the appearance in the engraving. In consequence of the ground being dug all around it, I had an opportunity of observing the nature of the foundation as well as the pedestal, which I found of the most solid structure.

The pillar consists of six blocks of red granite or porphyry, each about ten feet high, and six in diameter. The capital consists of twelve rows of masonry, and the whole is crowned by a square row of stones about eighteen inches high.

Hobhouse calls it ninety feet high, but I think that an actual measurement with instruments would bring it very close upon one hundred and five, as I was very careful in comparing one point with another, and measuring it. It is encircled with fourteen iron hoops, of a much more modern date than the pillar itself, and these have evidently been put on to prevent the stone coming off in large scales, as it appears prone to do: in fact, at the time I saw it, there were various loose fragments which were only held to the body of the column by these hoops, and many places from which other pieces had fallen.

Hobhouse says that these hoops conceal the joints of the pillar, but in that he is mistaken, as the joints are marked by the wreath of laurel, about twelve inches deep, round the bottom of each block of stone. He is correct, however, in saying that the hoops are of iron, and it is difficult to imagine how Wheler made such a mistake as to call them brass.

Tournefort, who visited Constantinople in 1700, says that it is composed of "porphyry stones, the junctures hid by copper rings." If such were the case in his day the rings must have been taken away, as, with the exception of the iron hoops, there is no metal about it. Pococke says that it originally consisted of ten blocks, and that *seven* of these now remain; and he describes the masonry on the top so accurately, that there is no doubt it remains now as in his day; yet there are only *six* blocks. The inscription upon the top is in Greek, much dilapidated, and too high to be read from the street.

When there is so much discrepancy in the accounts of those who say they have seen this pillar, we can hardly expect a very correct historical account of it. The column is said to have been originally 120 feet high, and

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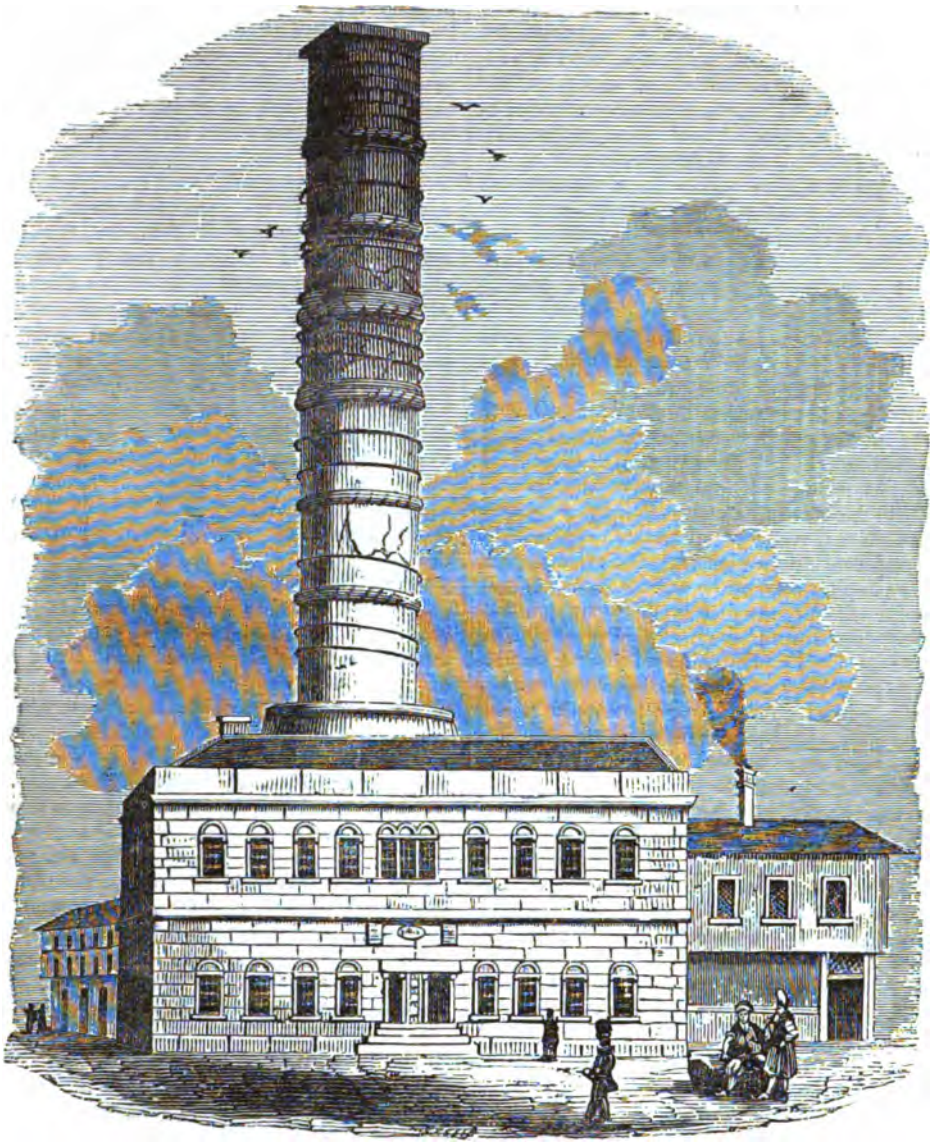

THE BURNT PILLAR AT CONSTANTINOPLE.

to have supported a bronze statue of the Trojan Apollo, supposed to have been the work of Phidias, (B.C. 450); it was of colossal height, bore a sceptre in its right hand, a globe in its left, and a crown of glittering rays upon its head. Although originally modelled for Apollo, Constantine called it after his own name.

Glycas says that, towards the close of the reign of Nicephorus Botoniates, (A.D. 1080,) the pillar was struck by lightning, and the statue thrown down—and, according to the inscription upon it, which is given by Wheler, it appears to have been repaired by the Emperor Manuel Comnenus (A.D. 1180.)

Whatever the pillar once was, it is now an ugly unshapely mass; and however grand the object may have been for which it was raised, it is unregarded by its present possessors, who seemed to consider that the time I was engaged in examining it would have been much better employed in smoking a pipe at the neighbouring câfé, and I was asked more than once if I was going to take it away, as those around me could not understand the motive for what appeared to them so much useless labour. There was, however, one middle-aged Turk who asked me to smoke a pipe with him, and when we had got fairly seated, he patronisingly recommended me not to employ my time on such old ugly pillars as the one beside us, but said, if I wished something good to paint, that there were some very fine new ones, prettily gilded and painted. on the top of the new palace on the Bosphorus;—the tasteful Turk was describing to me, as works of high art, the chimney-tops of the Sultan's kitchen! W.

THE MISSISIPPI SCHEME.

THE pages of the *Saturday Magazine* are, for obvious reasons, kept clear of those exciting topics which engage the attention of politicians; still, there have been events in the past history of nations which are now viewed pretty nearly in the same light by all thinking persons, and which are capable of affording instructive lessons. One such event was the mania—the national insanity, we may almost term it—which seized on the French people, at the early part of the last century, in favour of a speculation known as the MISSISIPPI SCHEME, the professed object of which was to insure large fortunes in a very little time; a plan which is nearly always attended with ruinous consequences.

The author of this delusive scheme was one John Law, who was born at Edinburgh, in the year 1671, of wealthy parents; and, after receiving a good education, during which he was known to pay much attention to matters connected with political economy, ran into profligacy and dissipation. He was sentenced to death for

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having killed in a duel a gentleman whose domestic peace he had destroyed, but was respited, and afterwards made his escape from prison, and fled to Holland, where he became secretary to the British resident. He found means to return to his own country about the year 1700, without molestation, and began to promulgate a scheme for relieving Scotland from some financial difficulties, by the issue of paper money on landed security. This plan was rejected by the parliament, and Law returned to the Continent.

He then became a gambler, and such was his skill and address that, by the year 1714, he was master of 110,000*l.*, and had managed to gain the good opinion of the King of Sardinia, the Duke of Orléans, the Prince, of Conti, the Duke de Vendôme, and other foreigners of distinction. France at this time was in a desperate state: the expensive wars in which Louis the Fourteenth had been engaged, and the extravagant proceedings of the court, had so reduced the national finances, that it was proposed to sponge out the whole of the national debt. The disgraceful expedient was however rejected by the regent Orléans, and a committee was appointed to inquire what course could be adopted. This was just the state of affairs to suit Law, and he was not slow in taking advantage of it. He proposed to liquidate the national debt by issuing notes secured upon landed property and the royal revenues This plan being rejected, Law proceeded to establish a bank of his own, assisted by those who chose to join him; but after two years, the regent seeing that the new plan promised success, took it into his own hands, and formed a royal bank, of which he made Law the director-general.

The time was now ripe for the famous Missisippi scheme, a scheme as stupendous as it was extravagant. France possessed the extensive country of Louisiana, in North America, which is watered throughout its whole extent by the river Missisippi; but as commerce, navigation, and manufactures, were at a stand for want of funds, this colony was of very little use. Law proposed to remedy all these evils at once, by vesting the whole of the privileges, effects, and possessions of all the foreign trading companies, the great farms, the mint, the royal revenues, and the property of the bank, in one great company, who, having thus in their hands all the trade, taxes, and royal revenues, might multiply the notes of the bank to any extent they pleased, doubling or even tripling at will the circulating medium of the kingdom, and, by the immensity of their funds, carry the foreign trade and the improvement of the colonies to a height unattainable by other means. The principles of national wealth were but little understood at that time; and, however wild and chimerical such a scheme may now appear, it was received with avidity by persons of all classes in France, as a sovereign panacea for the distresses of the nation. Letters-patent were granted to the company, under the title of the "Company of the West," and they were authorized to raise a capital of 100,000,000 livres. The company first had a grant of the whole province of Louisiana; then the farming of the revenues on tobacco was made over to them, on the payment of a large sum into the national treasury. Afterwards they became in succession the proprietors of the Sénegal Company, the East India Company, the China Company, the South Sea Company, and others, and the company changed its name to the "Company of the Indies." In July, 1718, the mint was made over to them, on the payment of 50,000,000 livres within fifteen months; and afterwards the whole receipt of the revenue was placed in their hands, for a further advance.

The company had thus actually obtained, in the course of a few months, all that Law had promised; for they concentrated in themselves nearly all the public and joint-stock wealth of France. The reader may naturally inquire what effect this extraordinary movement produced. The 100,000,000 livres, which constituted the original capital, was raised by 200,000 shares, of 500 livres each; and after some of the extraordinary grants had been made to the company, the expectation of enormous profits was so general, that people were desirous of becoming shareholders on any terms. The competition for shares speedily raised their price from five hundred to a thousand livres, so that those who had purchased the original shares were now enabled to get cent. per cent. profit on them. But when the royal revenues were placed in the hands of the company, the competition for shares amounted almost to frenzy, insomuch that the price speedily rose to 5000 livres per share. All classes, peers, princes, statesmen, magistrates, clergymen, mechanics, all scraped together what ready money they possessed, and the competition for shares was so great, that the price at last rose to 10,000 livres per share. The effect of this state of things may in some degree be imagined. If a purchaser of the original shares, at 500 livres each, sold them a few months afterwards for 10,000, he had a clear profit of 2000 per cent. But this was not all. When the company was about to be formed, shareholders were permitted to pay for their shares in a depreciated paper currency, called *billets d'état*, which were not then worth above one-third of their nominal value, but the subsequent price of 10,000 livres was payable in metallic currency; so that in less than twelve months, shares were sold at sixty times the sum they originally cost.

The consequences of this rapid transmission of money from hand to hand, were most startling, and ludicrous stories are related of the effects of the sudden fortunes made by humble individuals. Cook-maids and waiting-women appeared at the opera bedizened in jewels; and a baker's son purchased the whole contents of a jeweller's shop. As to Law himself, he became in many respects the first man in France; he was made comptroller general of the finances, he possessed the confidence of the regent, and was courted by princes, peers, and marshals, who waited at his levees as if he had been a sovereign. He amassed such immense property, that he was enabled to purchase no less than fourteen estates with titles annexed to them.

But such an unnatural state of things could not last long; no *new* wealth had been produced by this scheme, which was nothing but a change of money from one hand to another, by artificial means. The first circumstance which indicated the rottenness of the scheme was the continual demand on the bank for gold and silver specie: the original purchasers of the shares converted their newly acquired property into gold, and sent it out of the kingdom, as a security against the approaching storm; it was estimated that not less than 500,000,000 livres in specie were conveyed out of France. This alarmed the government, and it was ordered that small payments only should be made in specie, and soon afterwards that no person should keep more than 500 livres in their possession, the bulk of their money being in notes.

But the finishing stroke was brought on by the following circumstance. The bank, acting in concert with this all-engrossing company, had issued paper money with such rapidity, that by the month of May it amounted to 2,600,000,000 livres, while the whole of the metallic specie of the empire amounted to only about half that sum. It was proposed, therefore, either that the value of a paper livre should be diminished one-half, or that the value of a livre in specie should be doubled, in order to equalize the paper currency with the metallic. This proposal Law opposed, but it was carried against him; and the people were thunderstruck at hearing that the value of the notes was reduced one half. The effect of this breach of national faith was instantaneous; the notes became mere waste paper; those who had gold, feeling that the government which had reduced the value of the notes to one half, might proceed still further, refused to exchange their gold for notes on any

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terms; and the holders of the notes (amounting to 90,000,000*l.* sterling English) were reduced to beggary.

John Law at once fell from the height of power and became an object of execration, and his life was in danger from the rage of the unfortunate note-holders. He escaped from France, and his immense possessions were confiscated to the crown as having been acquired through unfair means. He wandered from country to country, and experienced a truth which more worthy men have often bitterly felt,—that friends in time of prosperity become strangers with cold hands and hearts, when adversity overtakes those whom they formerly flattered. Law was persecuted nowhere out of France, but he was neglected everywhere, and died a poor man, in the year 1729, before he had passed the middle period of life.

Thus ended the Missisippi Scheme; and France had for many years to lament the short-sighted policy which had subjected her to such severe distress.

HISTORY OF THE SMALL-POX, AND OF THE MEANS FOR ITS PREVENTION.

I.

ORIGIN AND PROGRESS OF THE SMALL-POX. INTRODUCTION OF INOCULATION.

ALTHOUGH the details of subjects connected with the practice of medicine can seldom be laid with advantage before the general reader, yet all persons aspiring to a liberal education should make themselves acquainted with the historical and literary portions of these, furnishing, as they frequently do, matter of an interesting and instructive character. Of all subjects of this kind the *Small-pox* is that which should interest an Englishman most, as it is from the exertions of his countrymen that all the attempts at removing or alleviating this scourge of the human race have emanated. This is literally the case, whether we consider the improved modes of treating the disease, introduced by Sydenham and Cullen, the introduction of inoculation into Europe by Lady Montagu, or the discovery of vaccination by Dr. Jenner.

The origin of small-pox is involved in much obscurity, and has given rise to many discussions. While some believe it to be identical with the plague of boils and blains inflicted upon the Egyptians, and with many of the diseases described by the Greek and Roman authors, others consider these analogies to be fanciful. According to the reports of Du Halde and others, this disease has been known in China for 1200 years prior to the Christian era, under the name of *Tai-tov*, or "Venom from the mother's breast." In Hindostan, also, the Brahmins declare that the disease has been recognized from the remotest antiquity, and that the *Vedas* contains a form for the adoration of a tutelar deity of the small-pox. Wherever the disease may have originated, the first distinct account we possess of its existence is of its breaking out among the Arabians, at the commencement of the seventh century. This epoch (622) was most favourable for its dissemination, being that in which Mahomet led forth his followers, animated with fanatical zeal, to the conquest of various countries. In thirty years he and his successors had conquered Syria, Egypt, and Persia, and diffused the disease over all these countries. So freely did this diffusion of the malady take place over the Mohammedan empire, that the Saracen physicians founded their treatment on the theory that it arose from a natural change in the human constitution. It spread into Europe during the eighth century, after the conquest of Spain and Sicily; and in 731 the Saracens crossed the Pyrenees, and invaded France. They were repulsed before the walls of Tours, by Charles Martel, yet they left the infection of the small-pox and measles behind them. Mead and others have attributed the introduction of small-pox into Europe to the returned crusaders; but, although these may have brought fresh irruptions of the disease, it was known two centuries prior to that epoch. The examination of some old Irish MSS., in the Bodleian Library, has led Dr. O'Connor to believe that the ravages of small-pox were known in Ireland as early as 679 and 742. However this may be, Great Britain could not escape for long a contagion which had overspread Europe; but the earliest accounts antiquarians can discover of its existence here refer to the commencement of the tenth century. In the Harleian and Cotton MSS., at the British Museum, are preserved prayers and exorcisms employed against the small-pox, showing the great terror that then prevailed upon the subject. Amulets, consecrated to St. Nicaise, (who had himself suffered from the disease, when Bishop of Rheims,) were worn as protectives by the nuns. Holinshed is the first English historian who expressly mentions the disease: speaking of the year 1366, he says, "Also manie died of the Small Pocks, both men, women, and children." The disease was transported to the continent of America by the followers of Columbus.

Considerable difficulty exists in judging of the extent of the ravages of small-pox in former times. The obscurity of early medical records, and their admixture with monkish fables and miracles, prevent our deriving much information from these sources. Again, as Dr. Moore has observed, the term "plague" or "pestilence" was formerly of much more vague and general application than in our own day, and almost every considerable epidemic was so designated: thus, in translating the Arabic writers upon this subject, the word plague was long used to express the term small-pox, and two very different diseases were confounded under the same title. There is little doubt that some of the pestilences of fire, so frequently raging in France, were attacks of small-pox, and there is reason to believe that the disease was frequent in its recurrence, and terrible in its mortality. In more modern times our accounts, of course, are more authentic. Dr. Jurin has calculated that one out of every fourteen born died of small-pox, and that one out of every five or six affected with the disease perished. Dr. Lettsom proved, from the Bills of Mortality, that the average number of deaths from 1667 to 1722 was to the whole number as 72 is to 1000, and from 1731 to 1772 as 89 to 1000.

But in its epidemic visitations this disease is more destructive of human life than the plague itself; and if, as Condamine states, it decimates in civilized life, it almost depopulates when carried among comparatively uncivilized races. Thus the capital of Thibet was after an epidemic deserted for three years, and Dr. Robertson and subsequent writers have described whole nations exterminated by this disease in America. In Russia two millions are said to have died of small-pox in one year, and one half of the persons attacked at Constantinople perished. Dr. Lettsom has calculated that not less than 210,000 fell annually victims to it in Europe, and Bernouilli estimates that not less than 15,000,000 of human beings thus perished in a quarter of a century. The disease seems to have been as fatal at the North Pole as under the Line, for in 1707 about 16,000 persons were carried off in Iceland, and in 1733 Greenland was nearly depopulated by it.

It may readily be supposed that so severe a disease as small-pox has called forth numerous proposals for its treatment. It is not our purpose to allude to these. We will only observe that most of the plans put into force originated with the Arabic physicians, or were the offspring of the dominant theory of the day, until the seventeenth century, when Sydenham, after describing the disease with an exactitude which has never been surpassed, and distinguishing it from the measles, with

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which it had been confounded, laid down principles of treatment, which were founded in common sense and exact observation. We will pass on at once to the introduction of the practice of *inoculation*. The principle upon which this practice is founded is this,—that small-pox rarely occurs twice in the same individual, and if the disease be communicated purposely to persons, by inserting some of the matter of the disease into their skin, they become subjected to a much milder disease, which is nearly equally as efficacious in protecting them from a second attack as when it occurs spontaneously in its severer form. It would seem that for some centuries the custom of what is called "sowing the small-pox" has been known in China, and the Brahmins are said long to have been in the habit of following this practice, accompanying the operation with solemn prayers, addressed to the deity of the small-pox. The Circassians and Georgians, again, call it "buying the small-pox," and are accustomed to make a small nominal present of fruit to the person from whom the matter is received. It is, however, from Constantinople that we directly received our information. Notices of the practice of "engrafting the small-pox," as it was then called, as performed in that city, were published in London and Venice, in 1703, by persons who had witnessed its success; but it obtained little or no notice until 1717, when the celebrated Lady Mary Wortley Montagu, who had accompanied her husband, then ambassador to the Ottoman Court, attracted general attention to it in one of her letters. In this she informed the public that a number of old women were in the habit of conducting the operation at Constantinople, with little inconvenience and the happiest results. Her own children were inoculated, as also were, shortly after, those of the Princess of Wales. The practice, now become fashionable, extended among persons of high rank. It was, however, soon discovered that the reports from Constantinople had been exaggerated, and it was found that the inoculated small-pox was occasionally a severe, and sometimes a fatal, disease. Some deaths occurring after inoculation, though in a very much less proportion than after the natural disease, a most determined opposition was organized against the practice. Many medical men opposed it, as an unjustifiable experiment, and several divines as an immoral proceeding, in attempting thus to arrest the decrees of Providence, and consenting to the self-infliction of a disease, which in its course might carry the individual prematurely before his Maker. The most eminent of the faculty of physic, however, approved of the practice, and several celebrated divines, among whom were Bishop Maddox and Dr. Doddridge, having convinced themselves of the efficiency of inoculation, proclaimed it as a Christian duty to endeavour by its means to diminish the fatality of small-pox. So slow at first, however, was the progress of inoculation, that only 897 persons were inoculated in eight years; and after a somewhat further trial, the practice seemed to be about to be relinquished, when news arrived of the wonderful success which had followed its adoption among the Indians of South America and the inhabitants of South Carolina.

These successes determined public opinion much in favour of inoculation, and, in 1746, the small-pox hospital was established for conferring the benefit upon the poorer classes, which had hitherto been confined to the wealthy. The operations in S. Carolina were performed by the planters themselves, and it has been remarked that these were frequently more successful when conducted by non-professional persons. This is supposed to have arisen from the custom which then prevailed among the profession of encumbering the practice with a number of needless precautions and restrictions, and the administering an unnecessary quantity of drugs. This opinion would seem to be confirmed by the success which attended the practice of the Suttons, two empirics, who, by simplifying the treatment adopted, met with few fatal cases, and were the means of rendering inoculation extremely popular in this country.

On the Continent, the practice of inoculation met with great opposition. In France, after a vigorous resistance on the part of the clergy and of the faculty of medicine, it was partially introduced in 1755, and the families of the Duke of Orleans and several of the nobility were inoculated. An extraordinarily fatal epidemic of small-pox, however, appearing in Paris in 1763, the government, believing the number of inoculations had caused the spreading of the disease, prohibited the practice. In Hanover, Sweden, and Denmark, the populace long resisted its introduction, and it made slow progress in Prussia and Germany. Catherine of Russia, desiring to set her subjects an example, had her own child inoculated, and the practice soon spread in that country; but, owing to a due want of caution in separating the inoculated from the rest of the community, the small-pox was thereby increased, and Sir A. Crichton states, that prior to the introduction of vaccination, one child in seven died from this terrible disease.

The flattering hopes entertained at the introduction of inoculation were not destined then to be realized. It is quite true that the inoculated disease was found to be infinitely less fatal than the natural, for while in this latter, one in six died, in the former, one in fifty, and after the improvements introduced by the Suttons, only one in two hundred died. It is also quite true that the natural small-pox very seldom attacks those who have been inoculated. But the fact which was lost sight of is, that the inoculated small-pox is just as contagious as the natural, and can impart to another as virulent a disease; so that, by thus diffusing inoculation, the number of centres or *foci* of infection were increased, and the disease spread over a wider surface; and, although individuals received security from inoculation, the community at large suffered. Thus, at the commencement of the eighteenth century, one-fourteenth of the mortality arose from the small-pox, while during the last thirty years of that century, when inoculation was in full vogue, that proportion arose to one-tenth. In the epidemic of 1796, 3549 persons lost their lives in London; and just before the introduction of vaccination, the total number of deaths in England from this disease was estimated at 45,000 annually. In Sweden and Spain, into which kingdom inoculation was scarcely admitted, the deaths from small-pox were fewer than in those countries into which it had been more freely introduced. This result could never have been prevented but by the adoption of two systems, both of which were impracticable, viz., universal inoculation, or where this was partial, the entire seclusion of those subjected to the operation.

THOUGH Justice has been called an "hobbling old dame, who cannot keep pace with Generosity," yet it is the hobbling old dame who creates confidence, and confidence is the firmest root of love, respect, and gratitude. Generosity may come with holiday gifts, but justice fills our cup with every-day comfort. We cannot live upon gifts; if we do we are degraded. Justice offers nothing but what may be accepted with honour; and lays claim to nothing in return, but what we ought not even to wish to withold.—*Woman's Rights and Duties.*

THE rubbing of the eyes doth not fetch out the mote, but makes them more red and angry; no more doth the distraction and fretting of the mind discharge it of any ill-humours, but rather makes them more abound to vex us. —BISHOP PATRICK.

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BENEFICENCE, BY CANOVA

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CANOVA AND HIS WORKS.

I.

ARCHITECTURE and Sculpture, in consequence of the intimate relations which subsist between them, have been represented as twin sisters; though in point of antiquity architecture must take the precedence of all the other fine arts. The period at which sculpture (in the ordinary sense of the word, as referring to representations of animated existence) began to be first practised, is unknown. But there has existed throughout its known history, a remarkable degree of harmony with the state of its sister art. The sculptured figures of Egypt and of India exhibit the same qualities of simple originality and ponderous dignity with the architectural monuments of those countries; the remains of Grecian art harmonize together in grace and beauty; and the boldness of Roman edifices expresses the same character with the gladiatorial figures and equestrian statues. The grand style of architecture of the middle ages met with its corresponding degree of excellence in statuary; and the varied beauties of the modern style of architecture have been kept pace with, through the revival in sculpture which has taken place almost in our own times.

From the days of Michael Angelo, to the latter part of the last century, sculpture gradually declined until it reached what may be called its second childhood; but here the advances of decay were checked, and new vigour communicated to the art by the appearance of the sculptor whose life and works are to form the subject of this and two subsequent articles.

Amid the recesses of those hills which form the last undulations of the Venetian Alps, as they subside into the plains of Treviso, lies the obscure village of *Possagno*, shut in by nature from general observation, and too insignificant in itself to merit notice except as having been the birth-place of Antonio Canova.

In this obscure situation was the future sculptor born on the 1st of November, 1757. His father, Pietro Canova, was by occupation a stone-cutter, and his mother was in nowise distinguished from the simple females of the hamlet. Antonio was the only child of this marriage, and when but three years of age, he lost his father, who is described as having been a man of melancholy habits, and weakly constitution. His mother soon formed a second marriage, and, removing to a neighbouring village, left Antonio to the care of his grandfather, Pasino Canova, also a stone-cutter, who, with his wife Catterina, watched over his infancy and amply supplied the loss of his real parents. The affectionate solicitude of Catterina was gratefully remembered by Canova through life; and, in after years, he proved his sense of former benefits, by taking her, then a widow, to reside with him at Rome, and paying her that respect and attention, which, while it did honour to his own feelings, contributed to the happiness and soothed the decline of his aged relative.

The romantic character of the scenery near Possagno, and the fine air from the mountains which refreshed the neighbouring country, led to the choice of several spots in that vicinity for the summer residences of the Venetian nobility. In the repairs and minor embellishments of these villas, the grandfather of Canova was occasionally employed, and he soon recommended himself among his patrons for his diligence and ingenuity. Canova often accompanied Pasino on these occasions, and exhibited, at a very early age, a decided taste for modelling, and for the more ornamental parts of the work on which his grandfather was engaged. The workshop became, even during infancy, his place of amusement; and so little interest did he take in the sports usual to childhood, that he became known among the youthful villagers as the *sullen Tonin**. Gentleness, rather than sullenness, however, was the characteristic of Canova, and it was more congenial to his temper to seek recreation and instruction in the tales and ballads recited to him by his grandmother, than to join the noisy circle of his young compeers. Accordingly he was ever to be found in the workshop of his grandfather, or hanging at the side and listening to the legendary lore of his grandmother, who was sometimes sorely annoyed to find proofs of his attachment left in the shape of tiny hand-marks impressed in modelling-clay on various parts of her dress.

* Tonin is the provincial diminutive of Antonio.

The grandfather of Canova was a self-taught artist, and considering the situation in which he was placed, his talents appear to have been far from despicable. He possessed some knowledge of architecture; designed with neatness and facility; and showed considerable taste in the execution of ornamental works in stucco and even in marble. At nine years of age, Canova was taken as his regular assistant, and before that time he had shown marked indications of skill in the execution of models in clay, and in fashioning the larger fragments of marble-cuttings into ornaments of various kinds. Two small shrines of Carrera marble, inlaid with coloured stones, are still preserved as specimens of his primitive labours in sculpture. Until his twelfth year Canova appears to have laboured at his humble occupation in complete obscurity, and to have made use of his moments of leisure in cultivating his taste for drawing. But the time had now arrived when his talents were to become known to those who were better able to appreciate them, than the inhabitants of his native village.

Signor Giovanni Falier, the proprietor of the *villa d'Asola*, near Possagno, was one of those noble Venetians of whom we have already spoken. He spent a few months of each year among the Alps, and was content to avail himself of the assistance of Pasino's skill in the repair of his villa, instead of sending for artists from the capital. The old man's good qualities had rendered him an especial favourite at the villa, and no season passed without his being invited to spend a few days there, even when there was little to require his labours. The young Canova now accompanied his grandfather on these visits, and soon became a universal favourite. "Few indeed," says his biographer, "could at this time know the amiable and unassuming boy, without feeling an affection for him. His light and graceful figure—his finely formed and expressive countenance, beaming at once with sensibility and fire, interested at first sight; while the unaffected simplicity of his address, the modest diffidence but not awkward timidity of his manner, his kindness of heart, and ingenuous disposition, could not fail to improve these favourable impressions."

Signor Falier thought he perceived in this youthful artist, talents that promised much; and believing that a little encouragement, and more extensive tuition, would elicit these, or, at all events, better qualify him to excel in the business of his grandfather, he generously took him under his immediate protection, and sought to obtain for him suitable tuition. An incident occurred at this juncture which tended still further to impress the patron of Canova with an idea of his talents, though it is not true, as generally related, that it was the means of his first introduction to the Falier family.

At a festival which was celebrated at the villa, and attended by a numerous assemblage of the Venetian nobility, the domestics had neglected to provide an ornament for the dessert, and did not discover their omission till the moment it was required to be supplied. Terrified at the thought of their master's displeasure, they applied to Pasino, who happened to be in the house, accompanied by his grandson. The old man was unable to suggest any remedy, but our young artist, seeing the necessity of the case, ordered some butter to be brought to him, and from that material presently carved a lion of such admirable proportions, and effective appearance, that it excited the attention and applause of all the company. An inquiry was made; the whole affair confessed,

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and *Tonin Canova* declared the contriver of the ornament. Tonin was then called for, and was ushered into the brilliant assembly covered with blushes, and expecting a rebuke, instead of the warm approbation and kind caresses he met with.

It happened about this time that a Venetian sculptor of some eminence took up his abode in the neighbourhood of Possagno. This was *Giuseppe Bernardi*, surnamed *Toretto*, who withdrew to this retirement for a time in order to complete various works of embellishment on which he was engaged. Bernardi having been employed by the Falier family, was well known to them as a skilful artist, and was accounted worthy of the charge of instructing Canova; who was soon settled under his tuition, and recommended to the especial notice of his new master by the benevolent senator Falier. Bernardi, or as he is more generally called, Toretto, quickly discovered that his pupil possessed no ordinary talents; and while paying every attention to his charge, united the affection and esteem of a friend, with the discipline of a tutor.

Canova, from his early years to the latest period of his life, was remarkable for his unceasing industry: he did not trust to the native talent which he must have felt conscious of possessing, but applied himself earnestly and perseveringly to study. Many drawings and models are preserved by the Falier family, which exhibit his gradual improvement under Toretto. Two drawings in chalk, one representing a Venus, and the other a Bacchus, are much valued, as they were executed only a few days after their author had been placed with Toretto, and therefore show the degree of perfection which he had been able to attain under his grandfather's care. As the performances of a boy, not exceeding twelve years of age, these are said to discover considerable talent; being sketched in a bold style and with great correctness of outline.

The works, however, which at this period most delighted the friends of young Antonio, and which excited the utmost surprise in his master, were the models in clay of two angels, executed during a short absence from Toretto, and without assistance from any similar figures. These therefore were the first really original performances of our artist. They were finished in secresy and haste, and then placed in a conspicuous situation in the workshop, against the expected return of Toretto. On his arrival, Canova watched the direction of his master's eyes with mingled hope and fear: at length they rested on these new creations of the trembling boy; and standing for a moment fixed in astonishment, he exclaimed, *Ecco un lavor veramente maraviglioso!* (This is in truth a most astonishing work!); and scarcely could he persuade himself that so perfect a work had been executed by his pupil.

Canova appears to have made his first essays in the representation of the human form in marble, when he had nearly attained his fourteenth year; but these performances were of a diminutive size, and merely undertaken as presents to his friends. Two of these statues, about a foot high, are still in the villa Falier. These attempts constituted his amusement and recreation from the more mechanical labours of his profession. Thus diligently employed, the time passed rapidly with our young artist, and through life he was accustomed to speak of this period as one of peculiar happiness. The family of his patron spent the winter in Venice; but the younger son, between whom and Canova a sincere friendship existed, was left at Possagno with a clergyman who conducted his education. In the company of the young Falier, and in visiting his grandmother and the good old Pasino, were spent every holiday, and every interval not devoted to study. The outlines of his character, such as with very little change it existed through life, were fully marked at this early period, and are thus described. "Open, sincere, ingenuous, he was himself unconscious of dissimulation, and could hardly conceive deceit to exist in others. Full of vivacity in the society of his friends, he delighted them, at once by the originality of his observations, and by the native elegance of a delicate, though still untutored mind. Among strangers, from a natural timidity, which subsequent intercourse with mankind never entirely overcame, he was reserved, yet seldom failed to strike observers as possessing a mind of no ordinary stamp, or to fix those impressions, even on a casual interview, which common minds never leave."

Canova was sincerely anxious to excel in his profession, though as yet there was no definite intention hat he should do more than follow the employment of his grandfather. But a period was now at hand, which was to decide his future prospects.

Toretto, who had now completed the engagements which for a period of nearly three years had detained him in the neighbourhood of Possagno, determined on re-establishing his residence at Venice: in a few months after returning thither he died, through the pressure of infirmities rather than of old age. Toretto evinced a sincere regard for Canova, in proof of which he declared him his son by adoption, with permission to bear the name; a privilege which was never made use of, and which, except as a pleasing mark of approbation, was productive of no advantage.

At the death of Toretto, Canova found himself once more on the point of being established in the workshop of Pasino, and to all appearance doomed to irksome toil, and to the obscurity of his native village. The Falier family were at that time absent from Asola, and Canova had no other friends capable of advancing his interests. But the dejection which naturally clouded his young and ardent mind at such a prospect, was suddenly changed into transports of joy, in consequence of an invitation from his benevolent patron to repair immediately to Venice, to consider the Falier palace as his home, and to trust to his friends there for everything which concerned his education and maintenance.

The frontispiece which adorns our article represents a group in the monument of the Archduchess Maria Christina, wife of Prince Albert of Saxony. The monument was executed in 1805, when Canova was at the height of his fame. It was justly considered as one of the finest conceptions of his mind, and, as such, will be particularly described in a future article. The group in question represents Benificence supporting an aged and infirm old man, and ascending the steps leading to the tomb. A funeral wreath unites this group with the rest of the procession.

THERE is not a more gloomy study than the history of the concluding scenes of Roman greatness. Nearly all ages and sexes appeared to contend with each other in the rapidity of their descent down the steeps of vice. Under the emperors, tyranny and crime, in all their flagitious and appalling aspects; every suspicion that could embitter existence, and loosen the bonds of society; every hateful sentiment, and every baneful passion, had pervaded the unwieldy empire. The history oppresses our mind like a frightful dream: it is hard not to associate the notion of external gloom with the moral ruin, and clothe the face of nature with the dismal hue, the sullen stillness of a gathering storm; we seem to behold the coming "planetary plague,"

> When Jove
> Shall o'er some high-vice city hang his poison
> In the sick air.

In the descriptions of their gorgeous splendour, and their baleful revolutions, their joys appear like demoniac wildness; their sobriety, the broodings of conspiracy or fear. To pursue inquiry through such ages would be useless; the manners of a people sinking into ruin from their own corruption, will never be appealed to, either for evidence of what is natural, or authority for what is useful.—*Woman's Rights and Duties.*

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ON CHESS.

ORIGIN AND ANTIQUITY OF THE GAME.

II.

IT has been supposed that the ancient Egyptians were acquainted with chess, or at least with a game bearing some close affinity therewith. Very slight inquiry, however, is sufficient to show that the game represented on the Egyptian monuments is nothing more than a species of draughts. The players are represented sitting on the ground, or on chairs, and the pieces, or men, being ranged in rank, at either end of the table, were probably moved on a chequered board; but, the game being always represented in profile, the exact appearance, or the number of the squares, cannot be given.

The pieces were all of the same size and form, though they varied on different boards, some being small, others large, with round summits: many were of a lighter and neater shape, like small nine-pins,—probably the most fashionable kind, since they were used in the palace of King Remeses. These last seem to have been about one inch and a half high, standing on a circular base of half an inch in diameter; and one in my possession, which I brought from Thebes, of a nearly similar taste, is one inch and a quarter in height, and little more than half an inch broad at the lower end. It is of hard wood, and was doubtless painted of some colour, like those occurring on the Egyptian monuments.

They were all of equal size upon the same board, one set black, the other white or red, standing on opposite sides; and each player, raising it with the finger and thumb, advanced this piece towards those of his opponent; but though we are unable to say if this was done in a direct or diagonal line, there is reason to believe they could not take backwards, as in the Polish game of draughts, the men being mixed together on the board.

It was an amusement common in the houses of the lower classes, and in the mansions of the rich; and King Remeses is himself pourtrayed on the walls of his palace at Thebes engaged in the game of draughts*.

We copy the following figure from BURTON'S *Excerpta Hieroglyphica.*

The modern Egyptians have a game of draughts very similar, in the appearance of the men, to that of their ancestors, which they call *dámeh*, and play much in the same manner as our own.

The most impartial authorities are strongly inclined to favour the assumption that chess was originally invented in India, and thence transmitted to the nations of Europe, by means of the Persians and Arabs. The *instruments* of its introduction to the western world are generally supposed to have been the crusaders; but as this supposition necessarily excludes all knowledge of the game previous to the year 1100, it is liable to very formidable objections.

An eastern historian informs us that the game was known at Constantinople in the year of our Lord 802. At that period the Emperor Nicephorus began his reign, and made a pointed allusion to the game of chess in an epistle to the Caliph Haroun al Raschid. "The queen," said he, speaking of Irene, the mother of Constantine, "to whom I have succeeded, considered you as a *rook*, and herself as a *pawn*. That pusillanimous female submitted therefore to pay to thee a tribute, the double of which she ought to have exacted from thyself." The game being thus familiar at Constantinople at that early period, it is extremely probable that the knowledge of it was speedily transmitted to other parts of Europe; and the intercourse maintained between the courts of Constantinople and France renders it extremely probable that the latter kingdom was one of the first, if not the very first, in Western Europe, to become acquainted with chess. It is singularly confirmative of this supposition that a set of ivory chess-men, of great antiquity, are still preserved in the Cabinet of Antiquities, in the Bibliothèque du Roi, at Paris, and that in the history of the Abbey of St. Denis, where they were formerly deposited, there should be found the following notice:—"L'Empereur & Roy de France, Sainct Charlemagne, a donné au Thresor de Sainct Dénys un jeu d'eschets, avec le tablier, le tout d'yvoire: iceux eschets hauts d'une pauline, fort estimez; le dit tablier et une partie des eschets ont esté perdus par succession de temps, et est bien vray semblable qu'ils ont esté apportez de l'Orient, et sous les gros eschets il y a des caractères Arabesques." The dresses and ornaments of the two principal figures in this set are declared by Sir F. Madden to be in strict keeping with the costume of the Greeks in the ninth century, so that, having examined the engravings given of the king and queen, he is persuaded that these chess-men really belong to the period assigned to them by tradition, and believes them to have been executed at Constantinople, by an Asiatic Greek, and sent as a present to Charlemagne, either by the Empress Irene, or by her successor Nicephorus. Embassies were frequently despatched by the Frankish monarch to the court of Constantinople, and that sort of friendly intercourse was maintained which increases the probability of the above supposition. The size and workmanship of the chess-men prove them to have been designed for the use of some noble personage, and from the decided style of Greek art visible in the figures, it is inferred that they came to Charlemagne from a sovereign of the Lower Empire, and were not the gift of the Moorish princes of Spain, or even from the Caliph Haroun al Raschid, whose costly gifts to the Emperor of the West are particularly described by German historians.

The old French romances abound with references to the game of chess, in the time of Charlemagne. In one of these, called *Guerin de Montglave*, the whole story turns upon a game of chess, at which Charlemagne lost his kingdom to Guerin, the latter having proposed a game at which the stake was to be the kingdom of France. Another romance, describing the arrest of Duke Richard of Normandy, says that he was playing at chess with Ivonnet, son of Regnaut, and the officers came up to him, saying,—"Aryse up, Duke Rycharde; for in dispite of Charlemayne, that loveth you so muche, ye shall be hanged now." "When Duke Rycharde saw that these sergeauntes had him thus by the arm, and helde in his hande a lady (*dame*) of ivery, where w^t he would have given a mate to Yonnet, he withdrew his arme, and gave to one of the sergeauntes such a stroke with it into the forehead that he made him tumble over and over at his feet; and then he took a rooke, (*roc,*) and smote another

* WILKINSON'S *Manners and Customs of the Ancient Egyptians*

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w^t all upon his head, that he all to brost it to the brayne."

Instances may be multiplied to disprove the common opinion that chess was not introduced into Europe until after the first crusade. We will quote one more example, and this is from the Epistles of Damiano, Cardinal Bishop of Ostia, who died in 1080. In a letter to Pope Alexander the Second, (1061–1073,) he mentions an incident which occurred between himself and a bishop of Florence.

Whilst we were dwelling together, having arrived in the evening at a resting-place, I withdrew myself to the neighbouring cell of a priest; but he remained with a crowd of people in a large house of entertainment. In the morning my servant informed me that the bishop had been playing at the game of chess; which thing when I heard, it pierced to my heart like an arrow. At a convenient hour I sent for him, and said, in a tone of severe reproof, "The hand is stretched out; the rod is ready for the back of the offender." "Let the fault be proved," said he, "and penance shall not be refused." "Was it well," rejoined I, "was it worthy of the character you bear, to spend the evening in the vanity of chess-play, and defile the hands and tongue which ought to be the mediators between man and the Deity? Are you not aware that, by the canonical law, bishops who are dice-players are ordered to be suspended?" He however, seeking an excuse from the name of the game, and sheltering himself under this shield, suggested that dice were one thing and chess another; consequently that dice alone were forbidden by the canon, but chess tacitly allowed. To which I replied thus,—"Chess is not named in the text, but is comprehended under the general term of dice. Wherefore, since dice are prohibited, and chess is not expressly mentioned, it follows without doubt that both kinds of play are included under one term, and equally condemned." To this the poor prelate could make no reply, and was ordered by his superior, by way of penance for his offence, to repeat the Psalter over thrice, and to wash the feet of, and give alms to, twelve poor persons.

Circumstances are the rulers of the weak; they are but the instruments of the wise.—Lover.

The cultivation of the affections comes next to the development of the bodily senses; or rather they may be said to begin together, so early does the infant heart receive impressions.—Mrs. Child.

A gentleman of Marseilles, named Remonsat, shortly before his death, desired that his numerous family might be assembled about his bed. He acknowledged the delight which his children had afforded him by their affection and attachment, and especially for the tender love which they bore to one another. "But," continued he, "I have a secret to disclose, which will remove one of you from this circle. So long as I had any hopes of living I kept it from you, but I dare not violate your rights in the division of the property which I leave you. One of you is only an adopted child—the child of the nurse at whose breast my own child died. Shall I name that child?" "No, no," said they with one accord, "let us all continue to be brothers and sisters."

The Almighty, who gave the dog to be companion of our pleasures and our toils, hath invested him with a nature noble and incapable of deceit. He forgets neither friend nor foe—remembers, and with accuracy, both benefit and injury. He hath a share of man's intelligence, but no share of man's falsehood. You may bribe a soldier to slay a man with his sword, or a witness to take life by false accusation, but you cannot make a hound tear his benefactor. He is the friend of man, save when man justly incurs his enmity. —Walter Scott.

Reject the society of the vicious; shun the agreeable infidel and the accomplished profligate. Lay it down as a fixed rule, that no brilliancy of connexion, no allurement of rank or fashion, no agreeableness, no wit or flattery, shall tempt you to associate with profligate or openly irreligious men. Make this an absolute rule. It is impossible not to suffer by its neglect. If you do not fall into their vices, still your heart will be estranged from the love of God.—Gresley.

HISTORY OF THE SMALL-POX.

II.

Discovery of Vaccination—Its Progress on the Continent—Re-vaccination.

The same century which witnessed the introduction of the practice of small-pox inoculation, also witnessed its utter abandonment; for it was in the year 1798 that Edward Jenner announced to the world his discovery of *vaccination*—the fruits of twenty years' experiment and deliberation. A short biographical sketch of this great and good man has appeared already in the pages of the *Saturday Magazine**; we have no intention of repeating what has already been said, and will therefore confine our notice to some particulars of his life which have relation to his discovery. Jenner was hardly dealt with by his cotemporaries, and he adds another name to the rather numerous list of wise men who have been more honoured in foreign countries than in their own. The posterity of entire Europe, nay, of the entire world, will yet, however, do him ample justice. If the philosophical and persevering pursuit of a laborious and intricate train of inquiry; if a consummate sagacity which explained difficulties with clearness, and anticipated with exactness conclusions which subsequent experience has verified; if the being actuated to this by the most philanthropic disinterestedness, which manifested itself in fervent thanksgiving to Almighty God for having rendered him an instrument of conferring good upon his fellow-men; if these qualities may challenge the admiration and gratitude of the world, then has the discoverer of vaccination an entire right to do so. We say advisedly and emphatically *discoverer*, because it has been foolishly argued that Jenner was not the discoverer of the practice in the proper sense of the word—An exposure of the fallacy of this objection will at once bring us to the history of the subject.

It has been observed, that in different parts of the world, when large numbers of cows had been congregated together, an epidemic disease has appeared among them at irregular and rare intervals. This disease manifests itself by the appearance of pustules, (pimples containing matter,) and especially on the udders of these animals. The disease, from the resemblance it bears to the small-pox in the human subject, has been called the *cow-pox*; indeed, recent experiments have proved that it and small-pox are, as anticipated by Jenner, merely mild and malignant varieties of the same disease. It had long been observed that this disease from the cow was communicable to the hands of the milkers, producing in them a mild and local eruption. Moreover, it had long been popularly observed, in the dairy counties, that persons who had contracted this disease from the cow, were in a remarkable manner exempt from attacks of small-pox. It is therefore true, in the limited acceptation of the term, that Jenner did not discover the protective power of vaccination. But the mere fact, which was passed by unheeded and unimproved by the other medical practitioners in the county where he resided, (Gloucester,) struck his observant mind even in his youth; and, for years and years after, the developement of this fact, and its conversion into a means of practical utility, were the grand objects of his life. He devoted some years to the minute observance of the disease in the cows, and among the milkers, and satisfied himself of its true nature, and of the means of distinguishing it from other spurious affections which resembled it. He made no secret of his investigations, and in 1780 he visited London, with the hope of being able to excite the attention of some of the learned men of the metropolis. He there met with little or no encouragement, and was thrown upon his own intelligent perseverance; indeed, at a subsequent period, when he proposed presenting a memoir upon the subject to the Royal Society, he was cautioned

* See Vol. VI. p. 50.

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not to risk losing the reputation he had acquired in that body on account of his researches in natural history. He persevered, and in 1796 he vaccinated a child with some matter taken from the hands of a milker; this child was afterwards inoculated for the small-pox, and resisted that disease successfully: he continued his experiments, and in 1798 announced his grand discovery to the world, detailing twenty-three cases of its successful application.

His state of mind, after the first success of his experiments, is thus depicted in his Journal.—He was in the habit of meditating much upon the subject among the meadows adjoining Berkeley Castle.

While the vaccine discovery was progressing, the joy I felt at the prospect before me of being the instrument destined to take away from the world one of its greatest calamities, blended with the fond hope of enjoying independence and domestic peace and happiness, was often so excessive, that in pursuing my favourite subject among the meadows, I have sometimes found myself in a kind of reverie. It is pleasant to me to recollect that these reflections always ended in devout acknowledgments to that Being from whom this and all other mercies flow.

His announcement was received with so much scepticism at first, that no subject could be obtained in London for some months, whereon to demonstrate the experiment. This having at last been satisfactorily accomplished, the practice was soon followed with avidity and precipitation. Mr Cline and other friends urged Jenner to settle in London, assuring him that a large fortune would await him. Attached to the charms of a rural life, and of the most limited desires in point of fortune, he refused. But peace and quiet were no longer to be his portion; from this period all his energies were requir d, not only to defend vaccination from the attacks of interested opponents, but, in a far greater degree, from the exaggerated and indiscriminate view of it taken by many of its supporters. Forgetting the laborious investigations Jenner had gone through, and the rules he had laid down for the adoption of the practice, numbers, believing the operation to be much simpler than it is, by neglecting the requisite precautions, propagated an affection resembling, but less protective than, the true one. A calamitous event of this kind occurred at the Small-pox Hospital, where, by inadvertency, the true vaccine virus became contaminated with small-pox matter, and in this state was distributed over the country and abroad, giving rise to inefficient protection and much disappointment. Dr. Jenner was unceasing in endeavouring to correct these errors, and in spreading correct ideas upon the subject; but in many of his professional rivals he found much evil spirit and bstinacy that disheartened him, and he obtained much more efficient assistance from non-professional persons, especially ladies, who were not too self-sufficient to listen to and follow the instructions of a man who had devoted his life to the inquiry. The repeated blunders which occurred, and the conduct of some who wished to divert all the honour and emolument of the practice to themselves, at last obliged him to repair to the metropolis.

Vaccination extended most rapidly, in that forming a remarkable contrast to the history of inoculation. As early as 1799 the Duke of York, seeing the great importance of the practice, caused its general adoption in the army, and both he and his brother, our late king, were always warm patrons of the practice. By 1801 6000 persons had been vaccinated in England, and most of them tested with the small-pox.

It is remarkable that the practice was received with much more avidity, and much more abundantly employed on the Continent than in the country of its birth. Dr. De Carro most extensively introduced it throughout Germany, and Dr. Sacco, in Italy, in eight years vaccinated himself 600,000 patients, and by deputy 700,000 others. Vaccination was introduced into Russia by the empress-mother, who presented Jenner with a handsome diamond, and wrote an excellent letter to him. The first child vaccinated was called Vaccinoff, and was pensioned for life. In Sweden and Denmark it was soon adopted, and rendered compulsory, with the happiest effect. Owing to our unfortunate differences with France, the vaccine matter was not introduced into that country until 1800, when it was adopted with enthusiasm. After the practice was introduced into Spain, Dr. Balmis obtained from the queen a commission to extend the blessing to all the Spanish colonies in Asia and America; and a well-appointed expedition, having on board a number of young children, in order to keep up the supply of matter, circumnavigated the globe, not for the purpose of effecting bloody conquests, or introducing among uncivilized nations corrupt manners, but for diffusing the antidote to the greatest bane of those portions of the human race. It was conveyed to the United States in 1799, and thence gradually to the native Indians. Jenner was most anxious to transmit the virus to the East, wherein the small-pox raged with virulence; but failure after failure occurred, until, by the ingenuity of De Carro, it was enclosed in wax balls, and conveyed to Bombay, by way of Constantinople, and quickly diffused over India. The Marquis of Wellesley exerted himself actively in its propagation, and in removing the prejudices which many of the Hindoos felt against it, from its originating with the cow. We will not pursue farther the detail of the progress of vaccination; suffice it to say, that in little more than six years it became diffused over the habitable globe.

The effects of this extensive diffusion were striking and satisfactory. In many countries small-pox was infinitely diminished in frequency and mortality, and in others seemed to be exterminated. Ceylon resembled formerly a deserted place, after an epidemic of small-pox, and Dr. Christie states, that on the most moderate calculation, the small-pox swept off one sixth of the population. After the introduction of the vaccine by the English, in 1800, the mortality from this source became trifling. In Sweden and Denmark, by 1805, it seemed entirely subdued. In the district of Anspach, in Bavaria, out of a population of 300,000, only six deaths from small-pox occurred in 1809, and from thence to 1818 only one; while in the contiguous state of Wurtemburgh, in which the precautions were more lax, the disease raged epidemically in 1814–17. In the epidemic at Berlin, in 1823, only five persons died, while in one prior to the introduction of vaccine, 1600 persons perished.

In concluding this article it may be desirable to present a slight sketch of the present state of vaccination. For several years after its introduction it was believed to be a complete preventive of the small-pox, and Jenner fondly hoped that the disease would by its means become exterminated. Further experience has, however, shown that small-pox does occasionally occur after vaccination, and, although the disease so produced is usually rendered much milder, yet has death even sometimes resulted. The small-pox, too, which for the first ten or twelve years after the introduction of vaccination was much subdued, has of late years broken out again with violence, and although its ravages have been much less extensive than heretofore, and chiefly fallen upon the unprotected, yet has much alarm been thereby excited. It is true that where vaccination has least extended, the disease has raged most; thus, Ireland has suffered from this cause less than England, and portions of this latter country, in which vaccination has been well attended to, have received an entire immunity. So, too, in the army and navy the prevalence of the disease has been very much diminished. Still, in countries, as Sweden, Russia, Italy, Ceylon, in which vaccination had been most effectually practised, and in which the small-pox for a while ceased to appear, that disease has of late recurred and

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attacked many of the vaccinated, and such cases are on the increase.

The reason of, and remedy for, this diminished protective power of the vaccine virus have occupied much attention of late years, both at home and abroad. Its failure has been attributed by some to the deterioration arising from the matter having passed through so many individuals; but the experience of the Vaccine Board and Small-pox Hospital leads to the opinion that the same virus which has passed from person to person to the number of 1500 or 1600, still produces as active and as protective a disease as at first. This would seem to prevent the necessity of again having recourse to the cow, which however has in some instances of late been done with success. Another reason has been sought in the imperfect manner in which the process of vaccination has often been conducted, and the spurious and only partially protective virus thus diffused. This, as anticipated by Jenner, has led to many evils, and it is even said, that no person vaccinated by him has been known thus to suffer; still its influence has been exaggerated, and the small-pox has undoubtedly frequently occurred in persons who have been vaccinated with the greatest care and with the purest virus. The most generally entertained opinion upon the subject is, that the influence of vaccination is only temporary, and that it requires renewal. Many facts are in support of this opinion, and it has been most extensively acted upon on the Continent. It has been attempted, but with little success, to fix the exact period when the influence thus wears out, in order to determine when *re-vaccination* should be instituted. It would seem, however, that those who have been vaccinated in infancy often re-acquire the susceptibility to small-pox as they approach the period of manhood, and especially when they change the climate to which they have been habituated. The proportion of those in whom vaccination thus loses its influence is not known, but is still very inconsiderable, although on the increase.

In epidemics the small-pox has been found to be resisted by the vaccinated in proportion as they were young, while they became more liable to it as they receded from the period when the operation was performed. So, too, re-vaccination (the success of which has been regarded as evidence of the susceptibility to small-pox being renewed,) has been found to succeed on the adult but not on the child. In the Prussian army 47,000 soldiers were re-vaccinated in 1837, and a full effect resulted in 24,000; not one of these took the small-pox, although it was extensively prevalent. In Wurtemberg 44,248 were re-vaccinated, and only one became affected with the small-pox. In the Grand Duchy of Baden, the small-pox attacked many who had been vaccinated, a decree for universal re-vaccination was issued, and the disease disappeared. Of 216 children re-vaccinated at the Foundling Hospital, only eleven succeeded. At all events, the practice of re-vaccination should be put in force; it is, at least, harmless, and either supplies the valuable information that the protective power of the original vaccination is not worn out, or where this is the case, it renews it.

Even with the qualification that experience has placed upon the degree of benefit to be derived from vaccination, yet it continues one of the greatest boons ever presented to the human race. It must be recollected that the small-pox itself sometimes occurs a second time, as it does also after inoculation; and although, perhaps, it occurs more frequently after even properly performed vaccination, yet the difference is not so great as supposed. But the important fact must be noticed, that while the mortality from the natural small-pox was about twenty-five in the hundred, that where the disease occurs after vaccination, it is but nine. Of the advantages conferred by the practice, the diminished amount of mortality and increased duration of human life testify: thus, while in 1780 the annual mortality was one in forty, in 1821 it was about one in fifty-eight. This is more striking still when applied to children,—the frequent victims heretofore of small-pox. Mr. Edwards states, that prior to the introduction of vaccination, sixty per cent. in London, and forty per cent. in all England died, while, during the twenty years ending with 1830, these numbers have been reduced respectively to thirty and twenty per cent. It is true that the whole improvement cannot be attributed to the diminution of small-pox, but it may be fairly stated, that a large portion of it may, especially as that dreadful disease, even where it did not terminate fatally, laid the seeds for many future maladies. It is a minor, but yet an important consideration, that the amount of personal disfigurement, the loss of eye-sight, &c., from small-pox have immensely diminished. In Great Britain and Ireland, between 40,000 and 50,000 persons were formerly supposed to perish of small-pox, and, in proportion to the increase of population, that number, but for vaccination, would probably now amount to 80,000. In London, wherein the mortality was usually 2000 or 3000 annually, only 277 died in 1827. Through the neglect of vaccination, small-pox has prevailed severely in Great Britain this last year, the number of deaths for six months amounting to 6000.

There is no probability that the disease will be eradicated, but its virulence may be diminished, and its sphere contracted. This will be best brought about by an extensive system of vaccination. No one who has not examined into the subject can imagine the number of unprotected persons yet in this country. Vaccination, adopted almost universally by the wealthy and educated classes, has been opposed by the ignorance, carelessness, indolence, and prejudices of their poorer brethren. It is not until the scourge arrives among them that it is discovered to how great a degree precautions against it have been neglected. Compulsory vaccination would be contrary to the genius and habits of this country, but facilities should be offered with unbounded liberality; and it is with that view that the Vaccination Bill was introduced into Parliament last session by Lord Ellenborough, and is now part of the law of the land. By it gratuitous vaccination is everywhere offered to the poorer classes of the community; but, for its successful carrying out, the advice and persuasions of their more fortunate neighbours will be required, and will, we are persuaded, not be found wanting. Another provision of this bill is the punishment, as a misdemeanour, of the inoculation for the small-pox. The persistence in this injurious practice has tended much to maintain the disease among us, and its prohibition cannot but be of the greatest service.

J. C.

AN IMITATION FROM I. KINGS XIX., 11, 12.

He passed, and his terrors before him were sent,
Beneath the strong tempest, the mountains were rent;
It crumbled to pieces the rocks as it passed
In its strength; but Jehovah was not in the blast.

By internal convulsions her terror expressed,
The earth the approach of her Maker confessed,
In the power of the servant, the Master adored,
For the might of the earthquake contained not the Lord.

The fire of the Lord from his presence has gone,
With the light of his coming the firmament shone,
As the smoke of a furnace, the mountain became,
But the Lord, but Jehovah was not in the flame.

Where then was Thy presence? The earth is all still,
The elements hushed are subdued to Thy will.
One still small voice only was heard in that hour,
When thy prophet adored thee, and worshipped thy power.

F. W. M.

Nothing can overcome him that is not first overcome by his own imaginations and passions.—Bishop Patrick.

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VELVET.

VELVET is one of the most beautiful productions of the silk-loom. It has been known in Europe for several centuries; but the secrets of its manufacture were for a long time confined to some of the chief cities of Italy. From this country the French learned the art, and succeeded in improving it. The revocation of the Edict of Nantes * brought numerous French refugees to England, about the year 1685, who settled in Spitalfields, and practised the art of weaving velvet.

The reader is probably aware of the process of plain weaving with the common loom. A large number of threads, forming the *length*, or *warp*, of the intended cloth, are wound upon a cylindrical beam or roller, and pass from thence through a *harness*, composed of moveable parts, called *heddles*. Each of these heddles receives its portion of the threads of the warp, and is alternately moved up and down, so that the threads of the warp are alternately raised and lowered. Each time the warp is opened by the separation of its alternate threads, a *shuttle*, containing the *woof*, or transverse thread, is thrown across it, and this thread, being driven into its place by a frame called a *lay*, gradually forms by its repeated crossing the material to be woven. In the weaving of velvet, however, in addition to the warp and woof, there is a soft shag, or pile, produced by inserting short pieces of silk-thread, doubled, under the woof, and these stand up in so large a number, and so compactly, as to conceal the interlacings of the warp and woof which are seen in plain weaving. This silky pile imparts to velvet its peculiar softness to the touch, as well as beauty to the eye; but the production of these results depends in great measure upon the uniform evenness of the pile. To insure this latter quality, it is necessary to have all the threads of the pile of equal length, which requires some skill, and much patient attention on the part of the weaver.

In weaving velvet, the loom is first prepared as in the ordinary process of plain weaving: another set of threads is then prepared to go in the direction of the threads of the warp, which set is kept distinct from the warp by being stretched diagonally as shown in the figure, which

SECTION, EXHIBITING THE STRUCTURE OF VELVET.

represents the structure of velvet, and the plan adopted to combine the threads of the woof with the pile. At *a a*, are the threads of the warp, and the dots placed in the loops show the section of the woof threads: at *b* are the threads intended for the pile, and these threads meet those of the warp in the angle *c*. The weaver places in this angle a brass wire of the same length as the breadth of the piece of woven stuff, so that all the pile threads are above the wire, and those of the warp below it. By the action of the treadles the alternate threads of the warp are raised, the shuttle is thrown, and passes over the pile threads, and the alternate threads of the warp, which are depressed; the batten is then made to strike up against the woof, the interlacing of the warp and woof is effected, and a loop of the pile thread is formed over the wire as at *d d*. It is necessary to pass the shuttle thrice between each insertion of the wire: the thread for the first woof is coarser than that employed for the other two, and the action of the batten forces the wire into its proper position. The upper part of this wire has a groove running along it: by means, therefore, of a sharp-edged tool, called a *trevat*, passed along the groove, the loops *d d* are divided, the wire is liberated, the pile is formed as at *e e*, and thus the process of weaving velvet is completed.

The weaver, however, finds it necessary to employ two wires, one of which remains in the texture, while the other is cut out: the reason for this is, that the pile threads may not be liberated and the whole process deranged; but as one wire is secured by the threads of the woof, the pile threads are prevented from being set at liberty while the loops are being cut. As soon as the wire is liberated from the first loop *d*, it is again inserted in the angle *c*; and when it has been secured as before, the wire forming the second loop *d* in the figure, but now the first loop, is cut out, and so on alternately. At one time the richest velvets were formed of thirty-eight loops to the inch, but this beautiful substance, velvet, has been so much in demand, and persons are willing to pay such high prices for the richest productions, that now as many as fifty-five loops are woven into an inch of velvet. This circumstance will enable the reader to form some idea of the extremely tedious process of velvet-weaving. The wire requires to be inserted and cut out again fifty-five times in the space of an inch, that is, a strip of velvet one inch broad, and whose length is equal to that of the breadth of the piece. And when we consider that the threads of the woof are of different degrees of fineness, rendering two shuttles necessary, which must be exchanged at frequent but unequal intervals, we can form an estimate of the incessant care and vigilance necessary on the part of the weaver in conducting these various operations. Much caution and dexterity, too, are required in cutting the loops: for however simple the operation of passing a knife along a straight edge may appear, yet this part of the process can only be acquired by long practice; for the smallest deviation from the straight line would injure the appearance of the velvet. The weaver being thus occupied in so many distinct operations in rapid succession, finds his work to increase very slowly, and he has been very industrious if at the end of a long day's work he has woven a yard of plain velvet.

It will be seen from what we have stated that the richness of velvet depends upon the number of threads forming the pile: the degrees of richness are accordingly indicated in this way, and the manufacturer speaks of velvet of two, four, or six threads, according to the number of the pile threads inserted. The striped velvet, with which waistcoats are sometimes made, is produced by leaving uncut a number of the pile loops.

The peculiarly rich effect of velvet results from the absorption of the light which falls upon its surface, and hence too arises the sombre effect when much of this substance meets the eye.

A room hung round with black cloth or velvet, and a coffin, on which is shed the light of wax-tapers, is an impressive spectacle. The light falling upon the cloth or velvet, is absorbed; and the feeling of gloom arises from the circumstance that nothing seems to reflect light. Whereas, in a room, whose sides are covered with mirrors, reflecting the various lights; where music and merry voices mingle in concert, how different is the scene! Even in the absence of human beings, and especially happy and innocent ones, whose presence blesses and enlivens almost every scene, the room yet appears cheerful, in consequence of the abundance of reflected light, the absence or absorption of which, is, in general, attended by a gloomy prospect.—TOMLINSON'S *Student's Manual of Natural Philosophy.*

IT should be impressed on the minds of persons in general that those plants which afford the most efficacious medicine in the hands of the skilful practitioner, are the most dangerous in those of the ignorant, and should therefore never be used as a domestic remedy.—PHILLIPS.

ENDEAVOUR yourself to do good to all men, and never speak evil of them that be absent.—SIR THOMAS SMITH.

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* See *Saturday Magazine*, vol. xvii., p. 35.

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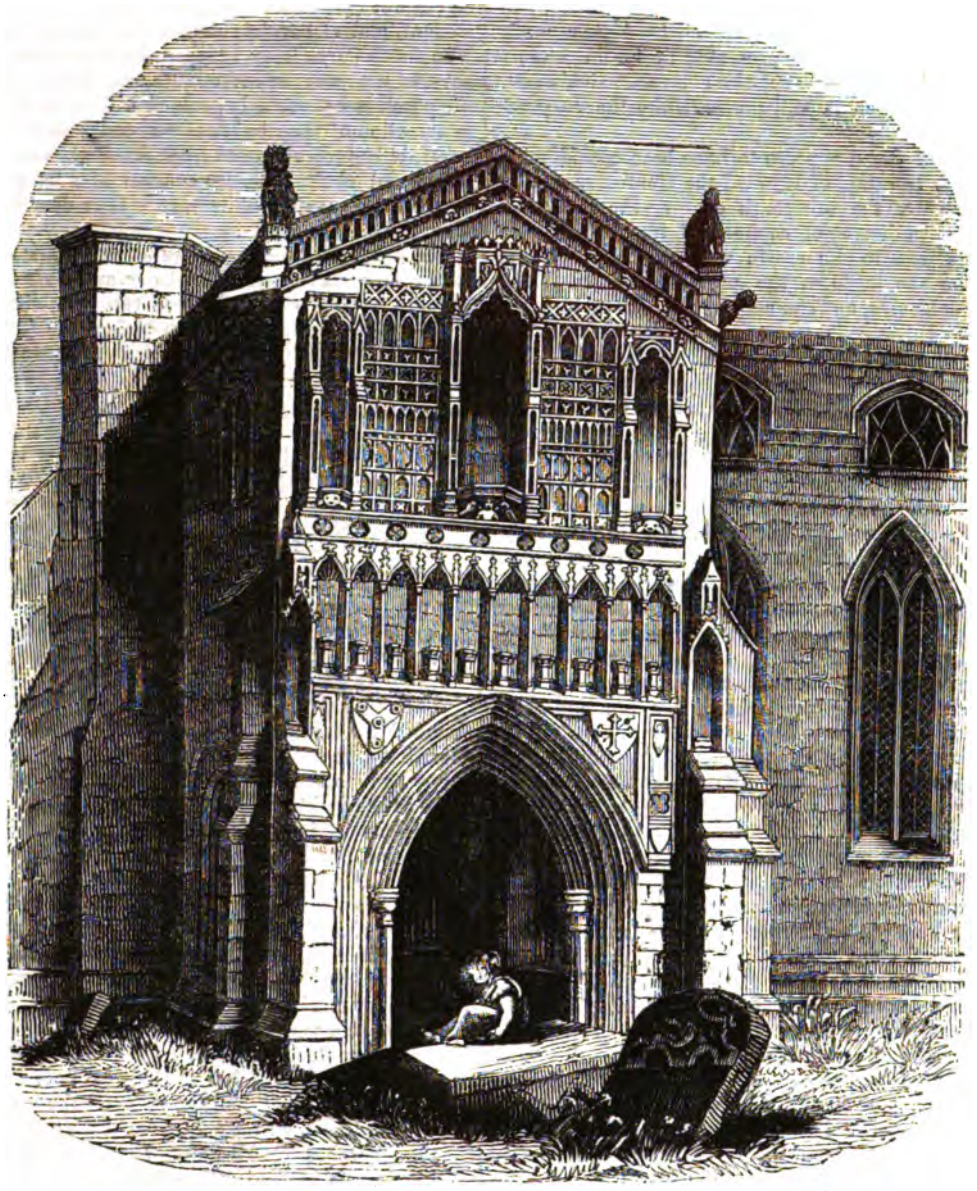
THE TOWN OF LYNN, NORFOLK.



SAINT NICHOLAS CHAPEL, LYNN.

In the flourishing town of Lynn, Norfolk, stands the Chapel of St. Nicholas, (said to be the largest parochial chapel in the kingdom,) of the architectural embellishments of which we give our readers a specimen n the above view of the southern porch.

Lynn is situated chiefly on the eastern bank of the river Ouse, about twelve miles from the sea, where that river, having gradually widened its channel, becomes very considerable, and nearly equal to the Thames above London Bridge. This important stream is sometimes called the *Great Ouse*, to distinguish it from the *Lesser Ouse*, which is one of its tributaries. It is also called the *Eastern Ouse*, to distingush it from the *Northern* or Yorkshire river of that name. To this river the town of Lynn owes its chief importance, for by it commercial intercourse is carried on with the interior of the country to a great extent, and a communication with the sea is formed. It would be interesting to trace the course of this river from the place of its rise on the borders of Northamptonshire and Oxfordshire, through the midland counties, of which it traverses a considerable part, to its junction with the sea. Many ancient halls and noble edifices grace its banks and those of its tributary streams, and the fenny and marshy districts

through which it flows have also their own peculiar interest. But we are now to speak of the town of Lynn itself, and of the edifice we have selected for description.

Lynn is situated on the eastern side of Marshland, and of the Great Level or Fen Country, and has been called the great metropolis of the Fens. It was anciently called Bishop's Lynn, having been under the jurisdiction, both temporal and spiritual, of the Bishops of Norwich, who had a palace where Gaywood Hall now stands. The episcopal authority was surrendered in the reign of Henry the Eighth, and from that time the town was called King's Lynn. During the contest between John and the barons, Lynn was remarkable for its constant adherence to the king, who remained there for some time, and at the prayer of the bishop made the town a free borough; he presented to the inhabitants a silver cup, weighing seventy-three ounces, richly gilt, and enamelled, which is still preserved by the corporation.

The trade of Lynn appears to have been considerable as far back as the time of Edward the Confessor, and at the beginning of the thirteenth century the town had risen to such a height of commercial importance, that the revenue paid to the crown was two-thirds of that arising from the trade of the port of London. The harbour is extensive, and can accommodate three hundred sail, but the entrance is somewhat dangerous from the shifting of the sands which accumulate there, and the anchorage is rendered difficult by the nature of the soil and by the rapidity of the tide, which rises to the height of twenty feet. The situation of the port of Lynn renders it a place of much foreign and coasting trade: it imports wine from Spain and Portugal; timber, deals, hemp, and tallow from the Baltic; corn from the northern parts of Europe; oil-cake from Holland; and timber from America. It supplies the neighbouring districts with these imported articles, as well as with agricultural produce, by means of its extensive coasting trade. White sand of a particular sort is sent to the glass manufactories of Newcastle and Leith; and large quantities of shrimps are conveyed from this coast to the London markets. Not less than one hundred and fifty thousand chaldrons of coal are annually brought into this port, for the distribution of which in the neighbouring counties, the Ouse and its tributaries, with the various canals communicating with them, afford great advantages. That the reader may judge of the extent of traffic connected with this port, we may mention, that in the year 1826, sixty British and one hundred and twenty foreign ships entered inwards from foreign parts, and, twenty-one British, and one hundred and ten foreign vessels cleared outwards. Several ships used to be fitted out annually for the Greenland whale fishery, but this branch of the business has of late years greatly declined. Ship-building has been carried on at Lynn from an early period, but is not at present of very considerable note.

King's Lynn comprises the parishes of All Saints, St. Margaret's, and St. Edmund. Of the churches of Lynn, St. Margaret's being undoubtedly the most important edifice, first demands our attention. This church was founded about the close of the eleventh, or commencement of the twelfth century, by Herbert de Lozinga, bishop of Norwich. According to an old record, he commenced building it at the request of the men of the town of Lynn, but the contributions proving inadequate to the magnitude of the work, he had recourse to the unworthy expedient of offering indulgences, or pardon of crimes for forty days, to all who would contribute to the undertaking. This plan proved eminently successful in raising money sufficient for the completion of the edifice; "the work," says the historian of Lynn, "went on prosperously, was soon finished in a magnificent style, and the indulgence effected what an appeal to the most pious considerations would probably have failed to accomplish."

The church, in its original state, was of larger dimensions, and more magnificent than at present; but it still presents a noble appearance. The western tower display different styles of architecture, and the lower part of them is evidently very ancient. The interior consists of a nave with aisles, a chancel, or choir, with aisles, and a transept. A tall spire once adorned one of the western towers, but this spire fell in 1741, and did much damage to the body of the church. Soon after that event, the lofty tower, or lanthorn, which rose above the intersection of the cross aisles, was taken down through fear of a similar misfortune.

The chapel of ease to St. Margaret's is St. Nicholas, an elegant chapel, built upon the site of one much more ancient, and elaborately decorated in many of its parts. The south porch may be seen by our engraving to be covered with a variety of minute ornaments. The roof of the porch is handsomely groined with stone, and at the intersection of the ribs are some heads and figures in bold relief, but much obscured by whitening. The interior of the chapel of St. Nicholas consists of a lofty nave, with two side aisles: its architecture is thus described by the Rev. Edward Edwards.

The distinguishing characters of this structure, as seen from within, are lightness, simplicity, and perfect uniformity of style, the tower alone being of earlier date than the rest of the fabric. The pillars are slender, having the horizontal section of the shaft nearly in the form of a truncated lozenge, relieved by shallow flutings, and raised about four feet from the ground by corresponding bases. They have no capitals, but small brackets, which support the inner ribs of the arches. Opposite the arches, in the side aisles, are an equal number of windows: between the windows are niches or canopies. The east and west windows are very large, with a pleasing mixture of curved and rectilinear tracery, and embattled ornaments upon the transoms. More ornament has been bestowed on the doors than on any other part of the building. The western door-way, in particular, is divided by a mullion, which supports an elegant niche, and is adorned with other sculpture in stone. The small south door-way is in the same style, as is also the larger door-way towards the north. The front of the *South Porch* is still more elaborate.

The original chapel is said by Parkin to have been founded by William Turbus, or De Turbe, bishop of Norwich, who was consecrated in 1146, and died in 1174. He gave it to the monks of the Priory of Norwich, but forbade the rights of baptism and marriage to be performed in it, in order to mark its dependency on the church of St. Margaret's. Attempts were made, at various times, to raise it to the dignity of a parochial church, but it has ever remained annexed to St. Margaret's as a chapel of ease.

The edifice appears to have been rebuilt in its present state during the reign of Edward the Third, and until lately a figure closely resembling the usual portraits of that monarch, with three crowns on his sceptre, embellished the centre of the west window. The ornaments above the canopied niches at the west door are also said to appear very much like the crest of the same king, as represented on his first gold coin, the quarter florin.

The churches of All Saints and of West Lynn have nothing remarkable in them to require description, and the church of North Lynn, or Lynn St. Edmund's, was swept away by an irruption of the tide, or by the inundation of fresh waters, caused by the addition of the Grant, the Ouse, and the Nene, to the other rivers which had their passage to the sea near this town.

At a small distance from the town of Lynn stands a very singular little building, called the Chapel of Our Lady on the Mount. "If other buildings attract notice by their magnitude," says the author before quoted, "this deserves it from its peculiar smallness. It is so well proportioned, yet so extremely diminutive, that it seems like a beautiful model for a much larger edifice, or it may not improperly be denominated a cathedral for Lilliputians." The history of this chapel is involved in

much obscurity. There are records extant of offerings made by devotees at the chapel of the Virgin Mary at the Mount, but the uses to which the building has been applied at various periods, subsequent to the date of these records, have been of a very opposite character. In 1638 we find it to have been used as a store-house for gunpowder: in 1643 it became a place of arms, and had a regular bastion thrown up in front of it, and it is supposed that a cistern, visible until a few years since, in the lower apartment, was used as a reservoir for water. In 1665 it was used as a pest-house, and in 1788 the use of the chapel was granted to a teacher of navigation for an observatory.

There are still existing the remains of several other ecclesiastical edifices at Lynn. A tower, ninety feet high, remains of the monastery of the Grey or Franciscan Friars, and serves as a landmark to vessels entering the harbour. Several other signs of former monastic institutions are also to be met with in the town. Lynn has four alms-houses, and many charitable institutions, an endowed grammar-school, national and Lancasterian schools, a mechanics' institution, a parochial and a subscription library. The population of the borough was, in 1831, 13,870.

The name of a country may be obliterated from a map, the deeds of heroes be effaced from the annals of the world; the pursuit of truth can only cease when man is no more: its light may be veiled by ignorance, craft, or cupidity, but it cannot be extinguished. The cities that gave birth to the illustrious philosophers of old have long ceased to exist, yet the immortal works of those sages that have escaped the ravages of time, are still as fresh and luxuriant as when their glorious oratory enchanted and captivated their disciples' ears.—MILLINGEN'S *Curiosities of Medical Experience.*

Great mental capacity alone, will never raise either individuals or nations to greatness or happiness. It is not mere mental power, but the right application of it, that brings our species to perfection. We know how possible it is for men to possess powerful abilities and extensive knowledge, and yet live a curse to their own country and to themselves. But what then, it may be said, is become of the boasted alliance between knowledge and virtue? The alliance is indeed strong, but it is not because there is a necessary connexion between the bare knowledge of facts and moral emotions. It is because, moral sensibility being a part of our nature, we cannot dwell long upon any subject, nor investigate all its relations, without discerning in it some circumstances that touch on moral nature, and awaken a sentiment. No one is destitute of all moral feeling, but some people have very little by nature, or it may have been destroyed by the strength and indulgence of their passions; and in such cases the most thorough knowledge of the facts that move others to admiration and love, will have no effect upon them. It is not the philosopher's laborious analysis, nor the fulness of his demonstration of the times and motions of the heavenly bodies, that have a moral effect. It is the perception of order and contrivance of beauty, and of infinity teeming with existence, which kindles within him feelings of admiration inherent in his nature. In like manner, when we study the sciences that relate to human life, it is not the logical proof, that certain means will produce certain results, that causes our emotions, but that sympathy with the good of mankind is implanted within us; and pictures of their good, laid strongly before us, move that affection. The cold and the sordid will not feel it, however perfectly they learn the science.

The tendency of knowledge and study, therefore, certainly is to promote right feeling and conduct in general, by occupying the mind always about the true and the useful; but a tendency is not a certainty, for it may be overruled by opposing circumstances; and the mass of mankind are made selfish and stolid by their gross habits of life.

Physic, for the most part, is nothing else but the substitute for exercise or temperance.—ADDISON.

GARDEN HERBS.

CHAMOMILE.

The generic name of this herb is *Anthemis*, derived, as ancient story tells us, from a virgin shepherdess, named *Athemis*, who kept her flock near Cuma, and not far from the cave where one of the Sibyls delivered her oracles. Athemis was frequently required to assist in the mystic ceremonies, and on one of these occasions was so overcome with terror that she died on the spot, and was immediately transformed into a plant bearing flowers, which received her name.

This herb was also called *Leucanthemis*, or *Leucanthemus*, from the whiteness of the double blossom; *Eranthemon*, because it flourished in the spring; and *Chamæmelon* (from which the English name is derived), because its savour was said to resemble that of an apple.

The genus of plants to which chamomile belongs is of the compound-flowered order. It is distinguished by having the scales that surround its flower-heads membranous at the border, like those of a chrysanthemum, from which genus it differs chiefly in the receptacle of the flowers being provided with little chaffy projections.

The wild chamomile is found more efficacious for the purposes to which the herb is applied than the cultivated sorts. It is frequent on many of the commons of England, and its finely cut leaves, scarcely elevating themselves above the level of the earth, and rich-looking flowers, of which the ray is white, but the disk deep yellow, have a pleasing effect amidst the scanty herbage of such situations. The whole plant is intensely bitter, especially the yellow flowers composing the disk. In the cultivated sort the white flowers of the ray almost supersede the yellow ones: the disk becomes extremely small, and thus the flowers possess the bitter principle in a less powerful degree. Besides the principle for which chamomile is chiefly celebrated, it has been found by chemists to contain tannin, camphor, and a volatile oil, of a beautiful blue colour. The description of this herb, given by Gerarde, is exceedingly accurate, and gives a better idea of it than anything we could say.

The common cammomile hath many weak and feeble branches trailing upon the ground, taking hold of the top of the earth as it runneth, whereby it greatly increaseth. The leaves are very fine, and much jagged, and deeply cut, of a strong sweet smell; among which come forth the flowers like unto the field daisy, bordered about the edge with a pale of white leaves: the middle part is yellow, composed of such thrums close thrust together as is that of the daisy. The root is very small, and thready.

The may-weed (*Anthemis cotula*) greatly resembles chamomile, but is erect of growth, of a branching habit, and exceedingly disagreeable in its odour.

The most ancient recommendation of chamomile, as a medical herb, was made by Asclepiades, the Bithynian, who was renowned for his great skill in physic, and lived to a very advanced age, without ever having experienced a day's illness. Pliny tells us that he pledged himself to cease to act as a physician if he should be ever known to be sick. This celebrated man was entreated by Mithridates, king of Pontus, to reside at his court, and was even visited by ambassadors on the part of the king, with offers of reward if he would comply with the request; but Asclepiades had determined to exercise his skill in Rome; and there accordingly he went, and became the founder of a sect in physic, which was called after his name.

Recommended by such high authority, it is no wonder that the herb chamomile was highly esteemed among the Romans. An extract from the flowers and leaves was made into lozenges, for the relief of spasmodic disorders, as well as for the jaundice, and liver complaints; the powder of the dried flowers was administered in intermitting fevers; the leaves were given as a digestive, emollient, and diuretic medicine; and the whole plant was pounded, as a remedy against the sting

of serpents and other reptiles. The plant was also used in garlands, and even during winter a plentiful supply was to be had in its dried state for this purpose, as well as for use as a medicine.

Gerarde quotes from Galen concerning the virtues of chamomile, and adds his own testimony that it is of force to digest, slacken, and rarify; that it is a special help against wearisomeness, easeth and mitigateth pain, mollifieth and suppleth; is good against the colic, and various other diseases, and is mixed with good success with all those things that are applied to mitigate pain; "and all these operations," saith he, "are in our vulgar cammomile, as common experience teacheth, for it heateth moderately, and drieth little"

Culpeper says—

A decoction made of camomile, and drank, taketh away all pains and stitches in the side: the flowers of camomile, beaten, and made up into balls with gil, drive away all sorts of agues, if the part grieved be anointed with that oil, taken from the flowers, from the crown of the head to the sole of the foot, and afterwards laid to sweat in bed, and that he sweats well: this is Nechessor, an Egyptian's medicine. It is profitable for all sorts of agues that come either of phlegm, or melancholy, or from an inflammation of the bowels; and there is nothing more profitable for the sides and region of the liver and spleen than it. It comforteth the sinews that be overstrained, mollifieth all swellings: it moderately comforteth all parts that have need of warmth, and digesteth and dissolveth whatsoever hath need thereof by a wonderful speedy property. Syrup made of the juice of camomile, with the flowers, in white wine, is a remedy against the jaundice and dropsy: the juice of the flowers is good to wash the head, and comfort both it and the brain: the oil made of the flowers of camomile is much used against all hard swellings, pains or aches, shrinking of the sinews, cramps or pains in the joints, or any other part of the body. Nichessor saith, the Egyptians dedicated it to the sun, because it cured agues, and they were like enough to do it, for they are the arrantest apes in their religion I ever read of.

In more modern times Dr. James speaks of chamomile as a plant of many virtues, being stomachic, hepatic, nervine, emollient, and carminative, and as affording a useful fomentation in cases of inflammation and tumour.

In later medical books we find these uses of the herb slightly mentioned. The external use of it is said to be little preferable to a simple fomentation with hot or warm water, and the powder of chamomile is scarcely used, on account of the inconvenient bulk of a requisite dose. As a domestic remedy, the well-known stomachic virtues of a cup of cold chamomile tea, taken fasting, are alluded to, and the extract of chamomile is recognized as a good simple bitter, and a useful vehicle for other tonics, when given in pills. Forty-eight pounds of this extract are obtained from a hundred-weight of good flowers.

We have mentioned this herb as producing an oil of a beautiful sky-blue colour. This colour is not permanent, and is only seen in the recently-distilled product. The oil of chamomile, which we obtain at the shops, is generally foreign, and has become yellow, or brownish yellow, and grows viscid by age. Antispasmodic properties have been attributed to this oil, and hence it is occasionally added to cathartic pills and powders. In Germany this oil rubbed up with powdered sugar is a favourite stomachic remedy, but a very unpalatable one.

The cultivators of herbs in the vicinity of London produce the chief supply for the market. There are upwards of twenty varieties known to English gardeners, one-fourth of which are native plants. They differ considerably in their qualities, but those are the most esteemed which strongly exhale their peculiar fragrancy when rubbed. The large double flowers are sometimes preferred, but, as we have already said, the bitter principle is most powerful in the disk, or yellow centre; and the single flowers are therefore the best.

Chamomile is a hardy perennial, and spreads rapidly. It is easily propagated by parting the roots in spring.

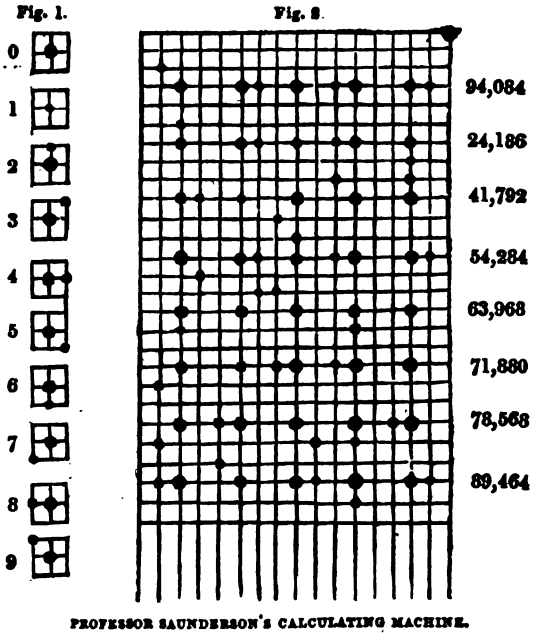
CALCULATING MACHINES.

2. The Apparatus of Saunderson, Gersten, and Pascal.

In our last article on this subject, we promised to describe an ingenious contrivance of Dr. Saunderson, for performing arithmetical processes in darkness. This remarkable individual, who was born in 1682, furnished an instructive example of the extent to which energy and perseverance may be made to overcome evils of a formidable and distressing nature. When only a year old, he lost his eyesight by an attack of small-pox; and being thus deprived of the blessing of light while yet an infant, his ignorance of its nature and properties was afterwards nearly as great as if he had been born blind. Yet such was the natural strength and intelligence of his mind, that he mastered all the usual branches of school learning, and became eventually Professor of Mathematics in the University of Cambridge, one of the most distinguished intellectual offices in England.

In the course of his mathematical duties, he had to perform many elaborate calculations; and still more was this necessary, before he could complete a treatise which, considering the circumstances under which it was produced, must be ranked among the most singular works published, viz., his *Treatise on Algebra*, in two large volumes. As the usual modes of writing with pen or pencil must obviously have been valueless to him, he had to devise a method by which he could feel the figures which he was arranging, or to establish a palpable arithmetic. We proceed to describe the plan which he adopted.

His calculating table was a smooth thin board, about a foot square, raised on a small frame, so as to lie hollow. The board was marked with a great number of parallel lines, which were crossed at right angles by another series of parallel lines, by which each square inch of the surface of the board was divided into 100 little squares, each square subdivided into four. At every point of intersection a perforation was made, capable of receiving a pin; and he always kept at hand two boxes filled with pins of two different sizes, or at least having heads of two different sizes; since it was by feeling the heads of the pins that he was enabled to perform calculations.



PROFESSOR SAUNDERSON'S CALCULATING MACHINE.

The particular portion of a pin, or of two pins with regard to each other, indicated a particular figure; and for this purpose four little squares were appropriated to each figure, in the manner shown in fig. 1. A large pin

was placed in the centre, for every figure or digit, except 1, when its place was occupied by a small one. For the digits 0 and 1, no pins surrounded the central one; but for all the digits from 2 to 9 inclusive, a small pin was placed near the central one, and the position of this second pin determined the digit indicated by it; when over, under, or at the side, of the central pin, the even numbers 2, 4, 6, 8, were indicated; but when placed diagonally, the odd numbers 3, 5, 7, 9, were expressed. All this can be seen at a glance by inspecting fig. 1.

The symbol for each digit being thus established, it is easy to conceive that every quantity, large or small, might be expressed by an assemblage of such symbols. This tablet was large enough to contain a great many such symbols; for the space devoted to each was one-fifth of an inch square, a narrow vacant line separating it on every side from adjacent symbols. The great pins which usually occupied the centres, and which were most frequently equidistant, were a guide to direct him in keeping the line, to ascertain the limits of every figure, and to prevent any ambiguity that might otherwise arise. As three of the vertical parallels were sufficient for a single digit, so three of the horizontal ones sufficed for a line of figures; and the next three for another line, and so on. If one symbolical arrangement on the right signified the unit's digit, that immediately adjoining it on the left was the ten's digit, and so on; and when the figures or digits were thus expressed, it is obvious that any of the usual computations could be performed, in the same order as with pencil or pen, provided the sense of touch were sufficiently delicate to detect at once the relative positions of the pins, and whether the central one were large or small. In this respect the blind are often remarkably expert; for having one medium with the external world quite shut out, their attention is directed with greater intensity to those which remain. Saunderson could place and displace the pins with incredible quickness and facility; he could also break off in the middle of a calculation, and resume it when he pleased,—recalling to mind the condition of the computation by merely drawing his fingers gently over the table.

Fig. 2 represents a portion of a table which was left by Dr. Saunderson, and which he appears to have arranged for his own use. The surface of the tablet is seen to be divided into minute squares, of which one hundred are contained in a square inch; and if we separate these lines into parcels of three in width and three in height, each parcel will be devoted to one symbol or figure. We then have eight lines of figures, one under another, each line containing five figures, or expressing tens of thousands. So long as the arrangement of the pins was undisturbed, it is obvious that such a table would be a *permanent* one, which could be referred to at any time, and it appears to have been for such purposes that this method was peculiarly valuable to Saunderson. After Saunderson's death there were found four t blets, eleven inches long, five and a half broad, and half an inch thick, divided by lines in the manner before described, and perforated at the points of intersection of the lines. On these tablets pins were arranged, so as to form small tables, having apparently a connexion with the sines, tangents, and secants of angles. He also made use of his tablets for geometrical diagrams, by sticking pins in at certain points, and winding a piece of fine thread or silk from one pin to another: the pins indicated angles or corners, and the thread indicated right lines: a rough approximation to *curved* lines could also be produced, by placing the pins very close together.

Such is a slight outline of the means by which the professor sought to effect that which might be thought almost unattainable by a blind man. It will be readily seen that many other kinds of palpable or tangible arithmetic might be devised, bearing resemblance, more or less, to that of Saunderson. We shall therefore not enlarge on this subject, but shall proceed to speak of methods in which machinery is brought in aid of calculation. What we have hitherto described are merely *instruments*, but there have been other contrivances deserving the name of *machines*, by which calculation was sought to be facilitated. Several machines of such a kind were contrived during the seventeenth and eighteenth centuries, but the only two of them which have been clearly described were that of Professor Gersten, of which he himself gave a description in an early volume of the *Philosophical Transactions*, and that of Pascal, which Diderot described in the *Encyclopédie Méthodique*.

It would be scarcely possible to give a detailed description of the mechanism by which the process of computation was performed in these machines: even engraved representations of the several parts, elucidative as they often are of written description, would in these instances be embarrassing to a general reader. We will therefore endeavour briefly to indicate the *kind* of movements which it is necessary to produce, instead of detailing the various positions of wheels, pinions, levers, screws, &c.

If we notice the manner in which quantities are, as it were, *built up* in the common system of numeration, we find each figure is worth ten times as much as it would be worth, if occupying a position one place to the right of it. Thus: 1728. Although 8 is greater than 2, yet the 2 in this position stands for a larger sum than the 8, because it occupies a position to the left of it. The quantities really expressed then by the figures 1728 are $\left\{\begin{matrix}1000\\700\\20\\8\end{matrix}\right\}$, but in common practice we leave out the cyphers, and place the significant figures side by side, taking care to keep them in the proper position from the right hand.

Now, if we have a wheel on whose axis is a pinion, with leaves or teeth,—if these teeth work into another set of teeth on the periphery of another wheel, and if the teeth on the latter are just ten times as numerous as those on the pinion, the pinioned wheel will revolve just ten times as fast as the other*. Here we have a certain sort of analogy between the decimal notation and the working of the wheels: it takes ten units to make up one figure or unit in the second place in common numeration, and it requires ten revolutions of the pinioned wheel to impart one revolution to the other wheel. Now this analogy applies to the machines to which we allude. There are generally several dial-faces, each marked with figures from 1 to 10. These dial-faces are fixed upon wheels, the teeth of which work into the pinions of other wheels, on which are similarly divided faces or disks. Then, while one face indicates units, another will indicate tens, another hundreds, and so on. The mode in which these wheels are made available in computations depends on the particular construction of the machine; but the principle to which we have just alluded is observable in all. In M. Gersten's instrument, for instance, if 32 were to be added to 59, two disks, or dial-faces, had to be turned by hand, until two index-points pointed to the two figures 5 and 9, one on each plate: then two slides were adjusted, until two indices pointed to the figures 3 and 2, one on each slide. Both the disks and both the slides were connected with toothed rack-work, which, interlocking one with another, turned another dial-plate in such a direction as to show 91 on its face, which is the sum of 32 and 59. If, on the contrary, it were required to subtract 59 from 91, indices would be pointed to 9 and 1, on two separate disks, and to 5 and 9, on two separate slides, and the movement, *in an opposite direction* to the former, of these disks and slides, would turn another wheel, so as

* See an article on the "Wheel and Axle," in Vol. XV., p. 131, of this work.

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to show 32 on its face, the difference between 59 and 91. The process of multiplication was effected by a kind of reiteration of additions, and that of division by a succession of subtractions.

In the machine constructed by Pascal, the arrangement of the parts was to facilitate performance of certain numerical calculations connected with the duties of an office held in Upper Normandy by Pascal's father. These calculations had reference to pecuniary matters, which were reckoned in the currency of France, as existing at that time: the *denier* wheel had twelve teeth, representing the number of deniers in a *sol*. The *sol* wheel had twenty teeth, equal to the number of *sols* in a livre, above which each wheel had ten teeth, indicating 10, 100, 1000, &c. livres. Each wheel in the series carried a cylindrical barrel, on which were engraved the ten arithmetical characters. The wheel which expressed each order of figures or units was so connected with the wheel which expressed a superior order, that when the former passed from 9 to 0, the latter was advanced one figure.

Although this mechanism seems to have been adapted to one particular purpose, there is no evidence that it was ever brought into practical use. It was intended for the performance only of particular arithmetical operations, and it is doubtful whether even those could be performed by it so readily as by the pen of a ready computer. It is however important to remark that the principle of construction observable in those instruments was the forerunner of a modern instrument, which not only eclipsed all the calculating instruments or machines before constructed, but is deemed to be one of the most splendid pieces of mechanism that any age or country has produced: we allude to Mr. Babbage's calculating machine. We shall give a brief account of this machine in our next paper, but wish, in the mean time, to draw attention to the fact, that it is by the action of one toothed wheel upon another, making it revolve slower or faster, that the process of computation is conducted.

THE SPRING FAIR AT PEST,

HUNGARY.

As I happened to be at Pest, during the great Spring Fair, I was not only provided with ample materials for amusement, but an opportunity of seeing the motley population of natives and strangers, which are usually attracted on this occasion; for though the Magyars, who have given their name to Hungary, are the greatest landed proprietors, and hold the reins of government, yet they are inferior in numerical force to the Sclavonians, (or Totoks,) the original inhabitants. These are divided into at least half a dozen separate tribes, each speaking a different patois; and if to them we add the colonies of Germans, Wallachians, Greeks, Armenians, French, Italians, Jews, and Gipsies, speaking their own languages, and retaining their national manners, customs, and religions, we may term Hungary a miniature picture of Europe.

My first lounge was through the fair, which afforded as many groups for the painter as for the observer of life and manners; the Babel-like confusion of tongues was endless, and the costume and appearance of the motley tribes could not have been equalled in variety by any other fair in Europe, or even by the most entertaining maskers that ever trod the Piazza San Marco, or the Corso at Rome; because here each performed his natural character. The most prominent figures in the group were ever the proud Magyars, particularly those just arrived from the provinces. The dress of some of these noblemen was indeed singular, consisting of a tight sheep-skin coat, or mantle, the woolly side inwards; while the other was gaudily embroidered all over with the gayest flowers of the parterre, in coloured silk, among which the tulip was ever the most prominent. Those whose wealth permitted it, were to be seen habited in their half-military, half-civil costume; and you might in truth fancy from their haughty demeanour, that you were beholding a feudal lord of our own country of the middle ages, as, mounted on their fiery steeds and armed with sword and pistols, they galloped through the parting multitude, upon whom, when the slightest interruption occurred, they glanced with scorn and contempt.

Among crowds of Jews, Turks, Greeks, Armenians, Tyrolians, Germans, Sclavonians, Italians, and Hungarian peasants, were groups of Gipsies, their black matted locks shading their wild sun-burnt countenances, exhibiting their dancing-dogs, bears, and monkeys, or playing a lively tune for the amusement of the surrounding multitude, these itinerants being the popular musicians of Hungary. In another part of the fair, mountebanks on elevated platforms were relating the exploits of the famous robber, Schruber, in the great forest of Bakony; or the ravages committed by the dreadful monster, half serpent, half flying dragon, that lately rose out of the Balaton lake, together with the most veritable history of the reappearance of the renowned Merman, who had inhabited, for the last two years, his own extensive domain, the Hansag marshes. All these astonishing marvels, besides hundreds of others, were listened to by the peasants, not only with attentive ears, but open mouths, and were illustrated by paintings as large as life, depicting the extraordinary wonders, executed in a style which set all imitation at defiance.

Bread, cakes, cheeses, vegetables, &c., were heaped on high in the streets, with the owners of each separate pile squatted in the midst. The savoury odour of frying sausages attracted some gourmands; whilst others feasted on the lighter refreshments of pastry, which the accomplished *cuisiniers* were preparing for their gratification.

But the popular viand was evidently the cray-fish, which all ranks, however otherwise engaged, were incessantly consuming; nor did they in this manifest any deficiency in *goût*, as the flavour of the little dainties was really excellent, and I have rarely seen them exceeded in size. Indeed, to thread the mazes of this great Hungarian fair, so as to obtain a view of its rarities, was an undertaking of no little difficulty, on account of the immense pyramids of wool, hides, tobacco, and other raw materials, which ever stood in the way; and as these articles were most tempting baits to the cupidity of the Jewish traders, they might constantly be seen making use of all their cajoling eloquence, while prevailing upon the artless peasant to dispose of his wares, at a price little more than nominal. When, however, the case was reversed, and the gaudy merchandise of the Jew and Armenian traders induced the peasant to become a purchaser, the balance of trade was considerably against him.

But, perhaps, of all the groups over which my eye wandered, none more strongly arrested my attention than the Saxon colonists: these were attired in the same costume in which their ancestors, some centuries gone by, had emigrated from their father-land, their blue eyes and heavy quiet countenances forming a striking contrast to the vivid glances of the half-Asiatic people around them. Nor were their moral traits less distinctly defined; for the prudent German, well knowing he was in the society of some of the most accomplished pickpockets on the Continent, wisely determined that they should not prey upon him, for he did not once remove his hand from his pocket, while his good woman never failed to keep watch behind, attended by her little ones, who, on the approach of the half-wild Gipsy, timidly covered their flaxen heads in the many folds of mama's cumbrous petticoat.

I would above all things recommend every traveller who may visit Pest during the Spring Fair not to leave it without taking a morning's ramble through the town. He will then see thousands of men, women, and children lying about the streets, beneath the piazzas, or in the numerous barks on the river, with no other covering save the canopy of heaven and their own sheep-skin mantles: he will also, still more to his surprise, behold them anointing their persons with lard, in order to protect themselves during the day from the effect of heat, and the bites of vermin and insects.—SPENCER'S *Travels in Circassia, &c.*

BENEVOLENCE, animated by Christian motives and directed to Christian ends, shall in no wise go unrewarded; here, by the testimony of an approving conscience; hereafter, by the benediction of our blessed Redeemer, and a brighter inheritance in His Father's house.—BISHOP MANT.

As it is in all cases necessary, on the one hand, to guard against the intrusion of empirics; so, on the other, it is expedient that we attach not ourselves, by undue prejudice, to any system of things, merely on account of a long acquaintance with it.—MAUND.

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THE MAGPIE, (*Corvus pica*, Linn.)

This shy and distrustful, but very beautiful bird, is generally found at no great distance from human dwellings. To judge of the beauty of the magpie we must not be contented with a view of the bird in confinement, for under such circumstances it is seen to great disadvantage; the plumage is soon deprived of its brilliancy, and has a dull and dirty appearance; the bird loses much of its lively and restless character, and has not the same arch and animated expression of the eye, for which, in its natural state, it is so remarkable. At the same time it becomes familiar and attached to its owner when tamed, and its natural disposition to chatter, rather increases than diminishes; so that when taken young, it may be taught to pronounce words and even sentences, and will readily imitate any singular noise.

The body of the magpie is rather short and round, but with the addition of the tail measures about eighteen inches in length: the stretch of the wings is nearly two feet; the weight of the bird nine ounces. The wings are not calculated for long flights, but are better adapted for ascending and descending. They are broad and rounded, and the flight of the magpie appears to be accomplished with some difficulty. To a superficial observer, the colour of the plumage of this bird appears simply black and white. On a more careful inspection, however, it will be found that various beautiful hues and reflections, green, blue, purple, violet, &c., adorn the wing-feathers and tail, enlivening the sombre plumage, and giving it a rich and glossy appearance. The white on the breast, belly, and inside of the wing-feathers, is remarkably pure. Occasional varieties in colour have sometimes been observed, as in the case of the allied species; the more remarkable are pure white plumage, or white streaked with black, and also pale buff, or cream colour. The female magpie differs from the male in being smaller, and having a shorter tail.

The magpie is common in England, France, Germany, and most other countries of Europe. It has been seen in China, in Kamschatka, in Hudson's Bay, and on the banks of the Missisippi. The fact of its being thus widely dispersed, proclaims the hardy nature of the bird, and the capability which it has of accommodating itself to varieties of climate. In whatever part of the world it is found, the character of the bird is the same. Like the jackdaw, it is renowned for its prying, pilfering disposition, and is the subject of many an anecdote illustrative of thievish propensities. It is also regarded as a bird of good or evil omen, according to the situation or circumstances in which it is observed. The tree in which it nestles is seldom uprooted by the most violent gale of wind, and this circumstance, which arises from the careful choice made by the bird of a thick-branched and firmly-rooted tree, is looked upon as a sign of the mysterious influence of the magpie. The house on which a magpie perches is said to be safe from falling, and this superstition is evidently derived from the former one, though without the same common-sense reason being applicable to it. We have read of a man who was accustomed to go to a particular spring or well for water every day, and was always followed thither by a tame magpie; but it happened that one sultry day in summer, the fountain was almost dried up, and yielded a very scanty supply. The ignorant and superstitious water-carrier, having observed that on this occasion the magpie had hopped on before him instead of following in his usual manner, and that the bird had perched himself near the well, and was looking down into it, and then looking up at his master in a very sagacious manner, immediately conceived the idea that it was through the agency of the magpie, that the water had disappeared, and that the cunning bird was enjoying his trouble and annoyance. Possessed with this idea, he pelted poor Madge with stones, and though he contrived to elude his vengeance at the time, yet he never forgave the bird for this supposed injury, or ceased to regard him with superstitious fear and dislike. It is common to hear the appearance of magpies spoken of as lucky or unlucky, according as their number is an even or an odd one. If they perch on a beast, it is a sign of evil to the animal, and for this, there is occasionally some reason. Like the raven and the crow, the magpie is very discerning, and quickly ascertains the symptoms of disease and death. Before the fact may have been observed by man, these birds are able to discover signs of decay, and watchfully notice the sickly among the flock. Lambs, and even sheep, are attacked by them, when in a weakly state; and they invariably commence the assault by aiming at the eyes of the animal. But their prey more frequently consists of smaller animals, such as young birds, field-mice, leverets, young poultry, fish, insects, &c. Fruit of all descriptions appears agreeable to them, and when nothing else is within reach, they content themselves with grain. They are loud and clamorous birds, and it is said that they frequently deprive the fowler of his sport, by giving the alarm to all the other birds with their noisy chatterings. Though not a bird adapted for high and powerful flights, the magpie is of so restless a character, that it seldom remains still for any length of time, but flies from tree to tree, or skips from one branch to another, shaking its long tail almost incessantly.

No birds display greater industry in the formation of their nests than magpies: they generally select a tree with thick branches, as being best calculated for the protection and concealment of their large nest; and they are often found to choose one which is in the immediate vicinity of a farm-house. The situation chosen by these birds, however, is not always of this description. The tall tangled hedge-row, the fir-grove, or the old well-wooded inclosure, are spoken of by Mr. Knapp in the *Journal of a Naturalist*, as being the places in which it delights to build: a lofty elm or thorn-bush or apple-tree, at some distance from dwellings, are mentioned in the *Ornithologia* as the places most likely to contain its solitary nest: other writers describe the magpie's nesting-place as being the tall hedge, or thick tree, near the cottage, and Rennie tells us from his own observations, that "in the north, almost every farm has its denizen pair of magpies, which incubate in their hereditary nest on the old ash tree, year after year, precisely like an hereditary colony of rooks." In the business of building their nest, the male and female both take their part. They begin this work together in February, placing the nest in such a position that it shall be completely enveloped and surrounded with branches, and, when the leaves appear, quite concealed from sight. In this respect they differ greatly from the rooks, who seem at no pains to hide their progeny, but place their nests in situations where they can be plainly observed from beneath, and where the bickerings constantly going on among the different members of the community in the vicinity of the nests, often afford amusement to those who watch their proceedings.

The magpie's nest is very large; for although the diameter of the inside of the nest does not exceed six inches, it is upwards of two feet on the outside. It is made of small branches, interlaced together, and having at the bottom a matting of soft flexible roots. The twigs are continued over the top of the nest as a sort of dome, but this dome seems rather a protection from enemies, than a defence against the weather. The only opening is at the side, and the distance from this opening to the central hollow of the nest where the eggs are deposited is considerable, so that the female in the process of incubation has room for her long tail. The order in which the construction of the nest is carried on, is said to be this: first the hawthorn branches which are to compose the body of the nest are arranged in their proper order; then a lining of fibrous roots and long

grass is laid in, and afterwards a smooth plastering of mud and clay. After the nest is so far completed, and made firm and commodious, the canopy which is to defend it above, is added. The sharpest thorns are chosen for this purpose and woven together in such a manner as to deny all entrance except at the door. So carefully and patiently do these birds provide all that is in their power for the safety and well-being of their young!

The Reverend John Hall gives a remarkable instance of a low situation chosen by magpies for the construction of their nest.

On the road between Huntly and Portsoy, he says, I observed two magpies hopping round a gooseberry bush, in a small garden, near a poor-looking house, in a peculiar manner, and flying out and into the bush. I stepped aside to see what they were doing, and found, from the poor man and his wife, that these magpies, several succeeding years, had built their nest and brought up their young in this bush, and that foxes, cats, hawks, &c., might not interrupt them, they had barricaded, not only their nest, but had encircled the bush with briars and thorns, in a formidable manner, nay, so completely, that it would have cost a fox, cunning as he is, some days' labour to get into the nest. The materials in the inside of the nest were soft and warm, but all on the outside so rough, so strong, and firmly entwined with the bush, that without a hedge-knife, hatchbill, or something of the kind, even a man could not, without much pain and trouble, get at their young, for from the outside to the inside of the nest extended as long as my arm. The magpies had been faithful to one another for several summers, and drove off their young as well as every one else that attempted to take possession of the nest. This they carefully repaired and fortified in the spring, with strong rough prickly sticks, that they sometimes brought to it by uniting their force, one at each end, pulling it along when they were not able to lift it from the ground.

The industrious and sagacious habits of the magpie are well illustrated by the above anecdote, and we may here observe, that if the birds be disturbed during the building of a nest, or if the nest be destroyed immediately on its completion, they do not enter upon the construction of another, (which, indeed, would be a wearisome undertaking, if we are to believe the account which says, that they are occupied two months in forming their nest,) but easily content themselves with an old nest of their own species, or the vacated nest of a crow, which they repair, and render available for their purpose.

Magpies have in general only one brood in the year, but, if their young be destroyed, they sometimes have a second, or even a third brood. The number of eggs is usually six or seven, of a yellowish-white colour, spotted with brown and grey. The male and female sit alternately for about fourteen days, when the young ones are hatched, and become the objects of their parents' unceasing care and attention for a considerable time. When first hatched they are blind, and continue so for several days. In supplying the wants of their young, magpies are very much addicted to plundering the nests of other birds of their eggs.

Advantage is sometimes taken of this circumstance to worry the poor magpie, especially when her nest is near a dwelling, and has attracted the attention of schoolboys. An egg is emptied of its contents by blowing, and bird-lime is introduced to fill the vacancy; the egg is then laid in some place where it is sure to attract the notice of the bird; and poor "Madge" soon approaches, cautiously hopping in various directions to see that all is safe. She then advances to the egg, and dashes her bill into it, in her usual manner, to convey it away to her brood; but as the shell is already broken, the bill penetrates very deep, and the shell is forced up towards the eyes, where adhering, by reason of the bird-lime, it forms a complete blind, and prevents the bird from seeing her way. She takes flight however, and knocks herself against the twigs and branches of trees, in a ridiculous manner, before she can disengage herself from the egg-shell. This foolish sport must be the occasion of much pain and inconvenience to the poor bird, as well as to her young, who are deprived of her care while she is labouring with her annoyance.

The councils which magpies appear to hold together, at particular seasons, commonly called "folkmotes," are associated in the minds of many with superstitious and ominous notions. The innocent objects of terror, while meeting together most probably for the purpose of choosing mates, are supposed to be conspiring and clubbing their wits, for the weal or woe of the inhabitants of the neighbouring village. If they are of an even number and carry on their cheerful, noisy chatter, it is supposed to betoken good to old and young—but if there is an odd magpie perched apart from the rest, silent, and disconsolate, the reverse of this is apprehended, and mischievous consequences are inevitably expected. The sudden silence which sometimes pervades a folkmote, or assemblage of magpies, is owing to their perception of the approach of a hawk or falcon. All their lively hoppings and chatterings are immediately at an end, and they remain motionless on the ground, as if all their faculties were absorbed in apprehension of their danger. When bushes are immediately at hand they creep into them for shelter from their enemy; and where large hawks are frequently seen, it has been observed that the magpies uniformly select some spot for their place of rendezvous, which is closely surrounded by broom, or furze, or low shrubs of some description, to which they may betake themselves.

THE MAGPIE.

CREDULITY is a far greater source of error than superstition, for the latter must be always more limited in its influence, and can exist only, to any considerable extent, in the most ignorant portions of society, whereas the former diffuses itself through the minds of all classes, by which rank and dignity are degraded, its valuable labours confounded with the vain pretensions of empiricism, and ignorance is enabled to claim for itself the prescriptive right of delivering oracles, amidst all the triumphs of truth and the progress of philosophy. Credulity has been justly defined, *belief without reason*, while scepticism, its opposite, is *reason without belief*, and the natural and invariable consequence of credulity; for it may be observed that men who believe without reason are succeeded by others whom no reasoning can convince.—PARIS.

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THE

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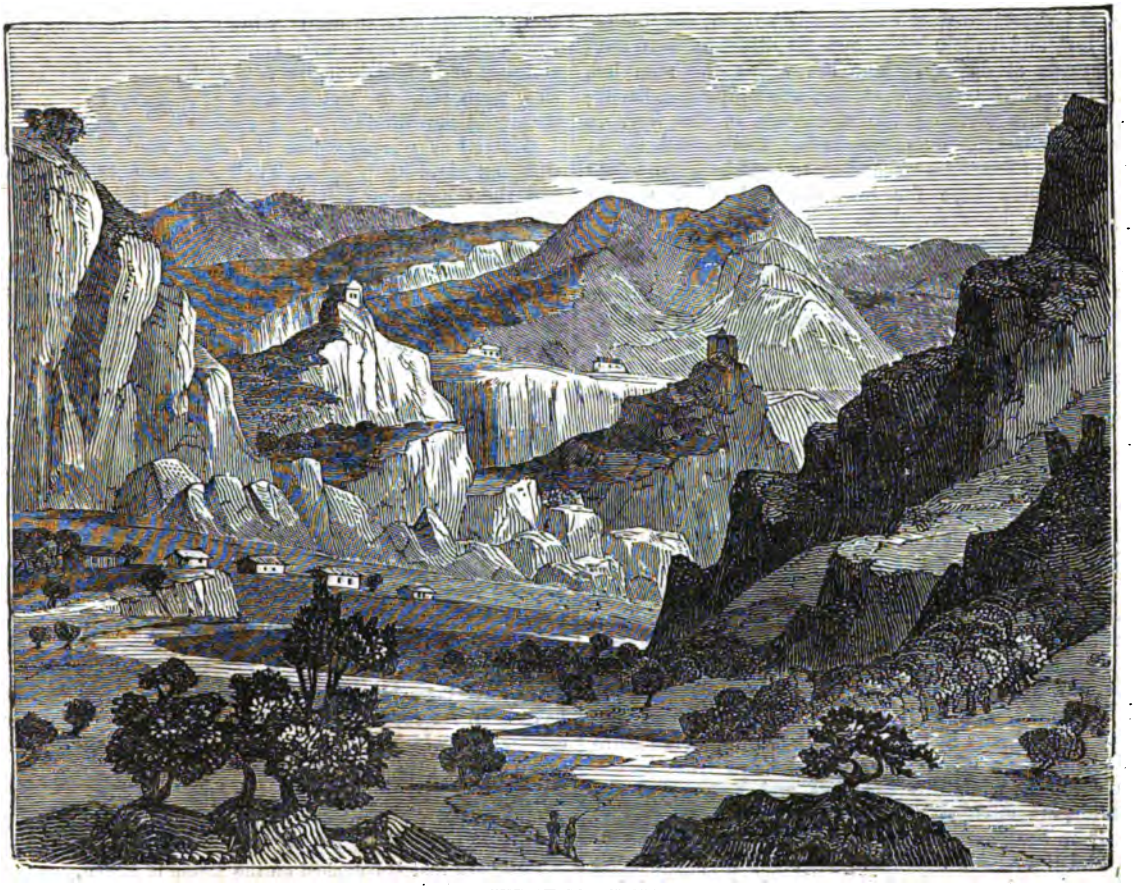
TURKEY AND THE TURKISH PROVINCES.



THE SULIOT HILLS.

THE SULIOT HILLS,

ALBANIA.

In a former article we gave a brief illustration of the wretched system which prevails in the government of Turkey, in regard to the appointment and subsequent conduct of the Pachas; and followed up our remarks by an account of the Pachalic of Joannina, in its topographical and commercial features. As it is our intention, to present, from time to time, such sketches as will illustrate Turkey and the Turks in their most interesting point of view, we will avail ourselves of the present opportunity to give an account of the *Suliots*, a brave but persecuted band of men, who, living under the Pacha of Joannina, may be deemed subjects of the Turkish Empire. A description of the small district known as the Suliot Hills will be necessary to a due appreciation of the history of the tribe.

At a distance of a few miles south-west from the city of Joannina are the Suliot Hills, among which four villages, named Suli, Avarico, Kiaffa, and Samoniva, are the chief seats of this tribe; but as circumstances, which we shall detail in the next paper, have made sad changes in the condition of the Suliots; we will describe their home and their customs as they existed a few years ago. The four villages were situated on a plain elevated 2000 feet above the neighbouring river, Acheron; with a perpendicular cliff descending to the river on one side, and a chain of lofty mountains on the other. From the banks of the river, a winding and intricate path led up to the villages; and this path was at intervals commanded by strong forts, so that the Suliot plain formed one of the most inaccessible spots in Europe. Here the Suliots dwelt, and cherished that love of liberty which so often distinguishes mountaineers. Among these men were seen some of the finest of human forms; and their continual exposure to sun and wind had given to their complexion a swarthy tint, not unsuited to our ideas of a brave and vigorous people. When they left their villages on warlike expeditions, they took no tents with them; they slept on their own capotes, or cloaks, and had the sky for a canopy. The greater part of them were almost born soldiers, for they wore arms from a very early age; and their bravery was so well known and appreciated, that a real Suliot was regarded by his neighbours in somewhat the same light as the ancient Spartans were by the rest of the Greeks.

The Suliots were Christians belonging to the Greek church, the same faith to which the Russians belong; and this circumstance has led to much correspondence and treaty between the Greeks and the Russians, during the struggle of the former to shake off the Turkish

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yoke. The Suliots, when their little republic was still entire, had no written laws; but many customs, handed down from time immemorial, served to regulate their conduct. The date of their establishment among these hills is placed by tradition in the 17th century, when some goat and swine herds, having led their animals to feed upon the heights of Kiaffa, were struck with the eligibility of the situation, and occupied it with their families. It is, however, the opinion of Mr. Hughes, that the mountains afforded refuge to some of those Albanians who fled from Turkish despotism after the death of Scanderbeg.

By whatever mode the district became peopled, the villages themselves were exceedingly simple: the houses were low, and rudely built, and no attempts were anywhere made at display. The life which the men led, when not actually engaged at war, was simple and hardy; and to aid in forming the character of the men to bravery and fearlessness, the women had precedence at the wells and fountains according to the character which their husbands bore for bravery; and if a woman happened to be married to a man of a weak and cowardly mind, she was obliged to stand at the well's side till the rest of the women had filled their pitchers. The effect of this custom was, that the men could more easily brave the enemy than the reproaches which were poured on them by their wives, if the latter had been subject to this ignominious treatment. The females were held in the highest esteem; and a curious law is mentioned by travellers, that no man was allowed, under the severest penalties, to interfere in the women's quarrels, lest by accident a woman might be killed; and that whoever committed murder on a woman was put to death with the execrations of his fellow men, not only as a murderer, but as a patricide.

Although the chief seat of this tribe was in the four villages which we have mentioned, yet there were numerous others gradually incorporated with one another. A century or two back, the tribe had attained sufficient importance to draw the attention of the neighbouring chiefs, and to carry on war with the Beys of Paramithia and Margariti, and with the Pachas of Joannina and Arta. The almost inaccessible and impregnable nature of their position effectually shielded them from attack from without, while the boldness and bravery of the mountaineers enabled them to take numerous possessions from the hands of their opponents, and gradually to extend their little republic. At one time it consisted of sixty-six villages, containing several thousand inhabitants. These inhabitants were divided into sections called *faras*, each fara containing a certain number of families, commanded by a chief or captain:—thus, just previous to Ali Pacha's war with the Suliots, the village of Suli, (from which they derived their appellation,) contained nineteen faras, and four hundred and twenty-five families: Kiaffa, four faras, and sixty families; Avarico, three faras, and fifty-five families; and Samoniva, three faras, and thirty families. The sixty-six villages of which we have spoken were considered as tributary or conquered possessions, and the inhabitants were not admitted to the rights of citizenship. Of the subordination in which they were held by the Suliots of the four federal villages, an example was given in the following incident:—on one occasion, the inhabitants of the four towns having increased beyond the means of subsistence, a certain number of them was quartered or colonized in seven of the tributary villages, where they were exempted from paying either forced contributions, or the regular tribute which the other inhabitants of those villages paid, and which amounted to one tenth of all produce.

In the few and simple judicial matters which had to engage their attention, the judge was either the captain of the fara in which the matter in dispute occurred; or in more important affairs, a council of chiefs assembled from all the four towns at Suli, and decided the matter. But warlike deeds were the chief employment of the tribe, as they are of most infant states. The Suliots had a band of one thousand chosen troops, called *palikars*, all citizens of the four towns; as well as fifteen hundred troops levied from the dependent villages. Their mode of warfare was such as is customary among a people but little advanced in the arts of civilized life; that is, it consisted more in skirmishes than in pitched battles—in daring expeditions, sudden attacks, and quick retreats. It is said, that they had a rather extraordinary custom in their wars, of sending out a small body of troops against a superior force; and, on the contrary, a large body against a small one: in the first instance, they intimidated their foes, who knew they were prepared to conquer or to perish on the field of battle; in the latter, they were able to secure more prisoners, and gain a larger ransom for the purchase of arms and ammunition.

Martial exercises formed the chief education of this rude but vigorous people. Their amusements, the dance and the song, were calculated, the one to contribute to the increase of their bodily strength, and the latter to warm their national enthusiasm, which was one of the chief traits in their character. The Suliot women contributed very powerfully to the maintenance of a martial spirit among the men, not only by the custom at the wells and fountains, to which we before alluded, but also by their readiness to share all the hardships and perils of war with their husbands: troops of women attended upon the soldiers, to carry provisions and ammunition, to assist the wounded, and even in some cases to engage in the battles:—these characteristics strongly remind us of the state of manners and customs among the ancient Spartans.

This description of the Suliot villages,—the institutions which bound the inhabitants into a fraternity, and the manners and customs of the two sexes,—must be considered as applying to a period forty or fifty years ago. Since then sad reverses have occurred: families have been rooted out after a desperate resistance; villages have been burned to the ground; and the Suliots have been for forty years a scattered people. The circumstances which led to these results will be briefly detailed in the next article on this subject.

THE BOAT LAUNCH.

THE bark that is launched on the bosom of Ocean,
Holds gloriously onward her queenly career;
She dreads not the billow nor tempest's commotion,
The storm, though it lash her, brings with it no fear.

But soon—soon she finds that her vaunted defiance,
Her pride and her might alike are but vain,
That her strength in the trial affords no reliance,
Her efforts are nought when opposed to the main.

And thus 'tis in life, when youth and its gladness
Spread visions of happiness full in our view;
We fear not, we think not, that sorrow and sadness
Must tinge all these pleasures a different hue.

That the storm of affliction and the dark hour of anguish
Shall come and these phantoms must vanish away;
That the brightest and best must speedily languish,
The fairest of all can but boast of *to-day!*

How fondly the heart then should look for the morrow,
And wait for that time, when its troubles shall cease;
When tho' shattered and tossed it shall end all its sorrow,
And find in the Heavens its haven of peace.

Youghal, Ireland. S. H.

IF you are often unquiet, and too nearly touched by the cross accidents of life, your devotion is not of the right standard; there is too much alloy in it. That which is right and unmixed taketh away the sting of everything that would trouble you. It is like a healing balm, that extinguisheth the sharpness of the blood. So this softeneth and dissolveth the anguish of the mind.—*The Lady's New Year's Gift.*

USE OF TEA IN CHINA.

We possess abundant information upon the culture and preparation of the tea-plant, and upon the period when it was first employed in Europe, but very little as to when it came into general use in China itself. M. Klaproth has contributed some interesting particulars upon this point to the *Journal Asiatique*. He says that the Chinese works convey but little information upon the subject. The practice of taking tea as a beverage, however, would seem to have commenced during the Tsin dynasty, and Wang-mung, a minister of public works, at the latter part of the fourth century, brought it much into vogue, being himself a great consumer, and treating all his visitors liberally with it. The historian of the Suy dynasty states that the Emperor Wass-te, in the latter part of his reign, was much tormented by severe pains in the head, for which he was recommended by a Buddhist priest to drink an infusion of the leaves of the plant termed *ming* or *cha*, (tea,) which effected a cure. The character was so written as to be pronounced anciently either as *cha* or *too*, and it is conjectured that the European word tea is the Malay *teeh*, which is probably derived from the old Chinese *too*. The Japanese have a tradition which ascribes a miraculous origin to the tea-plant. This states that a most pious prince, named Darma, came from India to China, in the beginning of the sixth century, and endeavoured to excite a higher degree of religious feeling among the inhabitants than then existed. He exposed himself, as an example, to severe privations and mortifications, living in the open air, and spending the whole night in prayer and exhortation. After continuing this course of discipline for some years, he happened one night, overcome by fatigue, to fall asleep. Horror-struck at this accidental violation of a vow, by which he had bound himself to refrain from such indulgence, he cut off, as a means of expiating the offence, and preventing its repetition, his eyelids, and buried them. Next day he found sprouting, from the spot where he had interred them, a plant hitherto unknown. He tasted some of the leaves, which enlivened him wonderfully, and restored to him the vigour he had long lost. He invited his followers to partake of so excellent an herb, and its reputation soon spread all over China. Kæmpfer has presented to the world a copy of the portrait of this saint, who enjoys a great celebrity, both in Japan and China.

In 780, during the Tang dynasty, a duty of ten per cent. was levied upon all tea brought from beyond the mountains where it grew. In the reign of Moor-tsang, (A. D. 824,) the government being short of money, this duty was raised to the enormous sum of fifty per cent. When it was proposed to Ta-tsoo, the founder of the Sung dynasty, to raise the price of tea, as a means of supplying his exchequer, he replied benevolently, "Tea is an excellent article, which must not be rendered dearer, or the poor will be oppressed." In the reign of Jin-tsung, (1023–1063,) large factories were established, and at that period two separate kinds were prepared, viz., *peen-cha*, in which the leaves were dried by the fire, and formed into a solid mass; and *san-cha*, wherein they were dried and powdered. In the reign of Shin-tsung, (1068–86,) Le-Khe proceeded to the country of the Shoo, to procure tea, and then bartered it in various cities for horses. Extensive transactions of the same kind were carried on under the Sungs with the Tibetan nations on the frontiers. Under the Ming dynasty, horses, &c., were also exchanged for the commodity with the Mongols.

The use of tea was introduced into Tibet in the ninth century, when Chang-loo was sent there as ambassador. The Tibetans, observing the preparation of this beverage in his tent, inquired concerning its nature. "It is," said Chang-loo, "a drink which relieves thirst and dissipates sorrow." The Tibetans naturally desiring to become possessed of so valuable a plant, he distributed several packets among them. Although the use of tea was known in Japan in 810, the plant itself was not introduced until 815, when two Buddhist priests, from the monastery of Toga-no-o, brought some young shoots from China. These thrived, and the use of tea soon became general in Japan.

Tea is the common beverage of the Chinese, of which they are passionately fond, believing that it unites to its agreeable qualities valuable medicinal properties. They always present it to their guests. Every one takes it three times, but some even ten times, daily. It is said by most authors to have proved a peculiarly beneficial gift to China, as tending to correct, in some measure, the nature of the water of that country, which is both unwholesome and nauseous. The herb is usually kept a year before employing it, as when used too fresh it produces a narcotic or stupifying effect. The Chinese pour boiling water over the tea, and leave it to "stand," or infuse, as we do, but they drink it without any admixture of sugar or milk, some of them, however, holding a small-piece of sugar-candy in the mouth the while. The common people use a very coarse tea, and as its virtues are not very volatile, or easily extracted by infusion, they boil it for some time. A vessel filled with water is hung over the fire betimes, in the morning, into which the tea, enclosed in a bag, or small basket, is placed. When sufficiently boiled, they draw it off, as their common and frequent beverage during the day. The imperial, or best tea, is preserved in porcelain vases, or in leaden or tin canisters, covered with bamboo mats. The commoner tea is kept in narrow-mouthed earthen pots, and the coarsest kind, (the flavour of which is not easily injured,) is packed up in baskets of straw.

The Japanese use powdered tea, diluted with water to the consistence of thin soup. The box containing the powder is produced, and the cups are filled with hot water: a quantity of powder is taken upon the point of a knife, and thrown into the cup, and stirred briskly round. It is sipped while warm. Du Halde says the same mode is followed in some of the Chinese provinces.

J. C.

THE SALT MOUNTAINS OF ISCHIL,

IN UPPER AUSTRIA.

We landed at Ebens-see, a small village at the southern end of the Gmunden Lake, and in reply to our inquiries, they informed us that the salt was manufactured at this place, but that the salt-mines were several miles in the interior. I had supposed that the salt was dug in a solid state from the mountain, and was therefore surprised when they took us to a large building, in which was a sheet-iron pan, about sixty feet in diameter, and two in depth, with a brisk fire kept up beneath. Water was flowing into it from two large cocks, and workmen were employed in shovelling salt out from the bottom on to a draining board, from which it was afterwards removed to small cone-shaped vessels, with holes at the bottom for further draining. In these it was suffered to remain until it became solid, when it was turned out, and the moist end of the cone being cut off, it was ready for transportation. Each lump contained about thirty-three pounds.

From Ebens-see we followed the windings of a deep valley for nine miles, when we arrived at Ischil, a pretty little village, frequented by valetudinarians for the benefit of its salt baths. These are in a new and very handsome edifice, with a Grecian colonnade in front, and an inscription, *In sale et sole omnia existunt*. The salt mountains are about three miles to the southward of Ischil. They form part of a high and broken range extending eastward and westward, and in the exterior are not to be distinguished from other parts of the range, the vegetation on every part being equally luxuriant. About half-way to the summit, we arrived at the residence of

the superintendent, and having here obtained permission to enter the mines, were conducted to a house a few hundred yards below, and provided with suitable dresses. Here is one of the entrances, of which there are twelve in all: they informed us that salt is found in any part of the mountain when they take the trouble of digging for it. Our course, after entering, was along a narrow horizontal gallery, openings occurring at intervals, along which we heard the dashing of water: at our feet also were wooden pipes for water, with branches running off into the various lateral galleries. Having proceeded a quarter of a mile, we came to a halt just where some bare logs rose in a slanting direction, from a cavity whose depth we could not ascertain. A guide straddled this log, and directing me to do the same, and hold on by him, he raised his feet, and away we went, sliding, or rather darting down, on the smooth log, and, excepting the glimmering light from our lantern, enveloped in total darkness. The guide kept himself upright, and, holding fast to him, I presently found myself deposited in safety on a heap of soft earth, and turned to enjoy the equal astonishment and fright of my companions.

We were now at the bottom of a chamber of irregular shape, but averaging about one hundred and fifty feet in diameter, and from four to ten feet in height; the ceiling in some parts being supported by blocks of sulphate of lime, piled up in the form of rude columns. The *gangue* of the salt, if the word may be used, is composed chiefly of a clayey earth, mixed up with irregular blocks of sulphate of lime: the salt is mingled with these, usually in strata of from six inches to two feet in thickness, forming, however, every variety, shape, and direction. It was generally of a reddish colour, and though mixed with impurities, very strong. The strata were very distinct on the ceiling of the chamber, which looked not unlike marbled paper, the salt itself presenting a great variety of colours, and its gangue scarcely a smaller number. The surface of the salt presented to us was rough and honey-combed.

We now for the first time learnt the mining process, which certainly is very simple, and sufficiently economical. In the first place, a small chamber is formed by the pick-axe and shovel, and arrangements having been made, by means of pipes, for conducting water to and from it, the outlet is stopped up, and the chamber is filled with fresh water, of which the mountain-streams furnish them with abundance. In a few weeks the water in the chamber is saturated with salt: it is then let out, and conducted by aqueducts to Ebens-see, a distance of twelve miles, where the water is evaporated artificially, and the salt is shipped for the store-house at Gmunden, When the chamber has become sufficiently dry, the workmen descend into it, clear it from the stones and dirt which have been loosened by the water, and fallen from the ceiling, and the chamber is then ready for another flooding. The large chamber we were in, as the guides informed us, requires one month for the process of filling, and fifteen days more for completing the saturation. It holds 80,000 German emers; is filled four times a year, and has been in use thirty years: one hundred pounds of water furnish twenty-six and three-fourths pounds of salt. There are thirty-four chambers in all, in which two hundred men are employed, working night and day, six hours at a time. They work four days in a week, and get forty-eight cents per week. When the chambers are approaching, so as to threaten a breach from one into the other, the further encroachment of the water in that direction is prevented by a compound formed by the clay and pulverized rock, which is beaten against the wall, so as to form an effectual barrier. At intervals, in the descent of the mountain, are three reservoirs, into which the water is successively discharged, I believe for the purpose of breaking the violence of the descent.

There is a chain of six or seven very beautiful lakes in this neighbourhood, two of which we visited, after leaving Ischil, and on the 29th August stopped for a short rest at Salzburg. Our consul at Vienna had described, in glowing terms, the beautiful scenery at Berchtsgaden, a short day's journey to the south of Salzburg; and as it had also a salt mountain, I determined to pay it a visit. There are also salt-mines at Hallein, south from Salzburg, which I did not examine, but which I was informed are worked, and are about as productive as those of Ischil.

Berchtsgaden is now comprehended in the kingdom of Bavaria. The royal family were there on a visit at this time: they had just been inspecting the mines, and I found many parts of the interior ornamented in a fanciful manner, the richest crystals of the salt and gypsum having been collected and disposed so as to form grottoes, devices, &c. Some of the former were large and perfectly transparent, but a deep red or brown is the prevailing colour. This mine appeared to me to be richer than that of Ischil. In some parts the salt forms regular solid strata, several feet in thickness, and so free from foreign matter as to be fit for use without any purifying process. In these places it is mixed by the aid of gunpowder; and the guides, after placing us in secure places, allowed us to witness two or three explosions. Generally, however, the mine differs very little from that of Ischil. We entered by a horizontal gallery, a quarter of a mile in length, and then came to branching galleries, along which pipes were conducted, for filling the chambers with water, or emptying them. One hundred and ninety men are employed, and the yearly product, I was told, is 8134 tons.—SILLIMAN'S *Journal.*

PRAYER.

Go when the morning shineth,
Go when the moon is bright;
Go when the eve declineth,
Go in the hush of night.

Go with pure mind and feeling,
Fling earthly thoughts away;
And in thy chamber kneeling,
Do thou in secret pray.

Remember all who love thee,
All who are loved by thee;
Pray too for those who hate thee.
If any such there be.

Then for thyself in meekness
A blessing humbly claim;
For strength to aid thy weakness,
In thy Redeemer's name.

Through Him thy secret breathing,
Shall reach the realms above,
As sacred incense wreathing
Where all is Truth and love.

ANON.—*Ulster Times.*

INNUMERABLE are the diseases that arise from our busy fancy. We are all subject to the tyrannic sway of imagination's empire. Under this mighty influence man displays energies which lead him boldly to dare danger and complicated sufferings, or he is reduced to the most degraded state of miserable despondency. These diseases are the more fearful since they rarely yield to physical aid, and it is seldom that moral influence is sufficiently persuasive to combat their inveteracy. It is idle to tell the timid hypochondriac that he is not ill. The mere circumstance of his believing himself sick constitutes a serious disorder. His constant apprehensions derange his functions, until an organic affection arises. The patient who fancies that he labours under an affection of the heart disturbs the circulation, which is ever influenced by our moral emotions, till at last this disturbance occasions the very malady which he dreaded. These aberrations of the mind arise from various causes,—mental emotions, constitution, climate, diet, hereditary disposition, education. Tertullian called Philosophy and Medicine twin sisters: both may become powerful agents in controlling our imagination.—MILLINGEN.

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ON CHESS. III.

THE KING. THE QUEEN. THE BISHOP. THE KNIGHT.

Ancient Chess-men discovered in the Isle of Lewis.

In the year 1831 an announcement made in the Scottish newspapers excited the attention of antiquaries to a curious discovery made in Scotland in the Isle of Lewis on the sea-shore, in the parish of Uig, of a considerable number of chess-men of excellent workmanship. They were discovered by a peasant of the island, whilst digging on a sand-bank, near to a ruin of some note, and having been purchased by the Trustees of the British Museum, these figures now form part of our national collection of antiquities, together with a bone or ivory fibula, and fourteen table-men, or draught-men, which were found with them. The chess-men are sixty-seven in number, forming the materials of six or more sets, but the pieces are of such various sizes, that it is difficult to select two sets which correspond exactly. Of the total number, six are kings, five queens, thirteen bishops, fourteen knights, ten warders, and nineteen pawns. The largest king is 4½ inches high, and 6¾ inches in circumference; the largest queen 3¾ inches in height, and 5¾ in circumference; the largest bishop, knight and warder, (the latter holding the place of the rook or castle,) are respectively 5 inches in height; and the largest pawn 2¾ inches. For the sake of distinction, part of these pieces were originally stained of a dark red or beet-root colour, but from the action of salt-water for many centuries, the colour is in most cases nearly discharged.

There is little variation in the form or attitude of the Kings. They are all represented as old men with large spade-shaped beards, moustaches, and hair falling in plaits over their shoulders. They have on their heads low quatrefoil crowns, either plain or ornamented with a border, and sit on square-formed chains, having high backs richly carved with various scrolls, figures of animals, intersecting arches, and tracery-work in the best style of art of the twelfth century, as seen on monuments, and in manuscripts. Their dress consists of an upper and an under robe, the former of which, that is, the mantle or *clamys*, is thrown in folds over each arm, and left open on the right side as high as the shoulder, (where it is fastened by a clasp,) for the purpose of leaving the arm free. Each of the figures holds a sword, with both hands across his knees, as though in the act of drawing it, according to the old mode assigned to royal personages. The swords are broad and short; the scabbards are marked either with a simple longitudinal line, or with lines placed diagonally. In the different figures, there are some slight variations, and in one the hair is not plaited, but spreads over the back in six long wreaths: the ornaments of the chains are also diversified; one of them exhibits an intersection of semicircular arches, as seen in some of our early Norman churches.

The Queens, who are also crowned, are represented sitting in chairs, ornamented in a style similar to those of the kings. From the back of the head of each hangs a species of hood, which spreads over the shoulders, and accords with what was universally worn by ladies of rank in the middle ages; as is proved by manuscripts and monuments of various nations. From the shoulders to the feet hangs a long mantle, which shows in front an under garment or gown. The sleeves of this, like those of the Saxons and Norman-French, are short, with a worked border; and from the elbows to the wrists are a series of plaits, resembling bands, which probably were worn round the arm. Most of these figures are represented in a contemplative posture, the head resting upon the right arm, which is supported by the left. One of them (represented in the cut) holds a curiously-shaped drinking-horn in the left hand. In the different figures there are some variations in the forms of the crowns and hoods: and in one a striped petticoat and the feet are visible, which are covered in other instances: the chair-back of the latter piece furnishes also another example of round and intersecting arches.

The Bishops. Five of these pieces are represented in ornamented chairs, and the remaining eight in a standing position. All the sitting figures, and four of the standing ones, wear the chasuble, dalmatic, stole, and tunic, of the form anciently prescribed, and corresponding with representations of much greater antiquity; the remainder have a cope instead of a chasuble, but the stole and dalmatic are omitted. The mitres are very low, and in some instances quite plain, but have the double band, or *infulæ*, attached behind. The hair is cut short round the head. They hold a crosier with one, or with both hands: and in the former instances the other hand holds a book, or is raised in the attitude of benediction. On the backs of the chasuble and stole are various crosses or ornaments. In the details both of the habits and other work, there are numerous minute variations.

The Knights are full-length figures mounted on horseback, and are probably the most interesting portion of the whole. They are habited in long coats or gambesons, which descend in folds to the feet; the sleeves have a cuff or border at the wrist. The leg has apparently a covering of some sort down to the ankle, where it is met with a species of half-boot without spur. Their helmets, with a few exceptions, are of a conical shape, and mostly with nasals and round flaps to protect the nose, ears, and neck. All the figures have moustaches and large round beards, except one, which has the beard separated into three forks. A long kite-formed

shield, suspended from the neck, hangs on the left side of each, ornamented with various devices, approaching in some instances very closely to heraldic distinctions. Beneath the shield appears the sword, which is fastened round the waist by a belt, and in the right hand each knight carries a massive spear. The horses are caparisoned in high saddles, plain or ornamented; saddle-cloths curiously bordered; stirrups and bridles; the mane is cut short, and the hair suffered to grow down on the forehead. On one side of the shields is a cross, bearing a lozenge, plain; on another is an ornamented lozenge; and the remainder are variously indented with crosses and other ornaments.

IT is, I think, conclusive that mankind, from a very early period, have their minds prepared for supernatural occurences by the consciousness of the existence of a spiritual world. But imagination is apt to intrude its explanations and inferences, founded on inadequate evidence. Sometimes our violent and inordinate passions, originating in sorrow for our friends, remorse for our crimes, our eagerness of patriotism, or our deep sense of devotion;—these or other violent excitements of a moral character, in the visions of the night, or the rapt ecstasy of the day, persuade us that we witness with our eyes and ears an actual instance of that supernatural communication, the possibility of which cannot be denied. At other times the corporeal organs impose upon the mind, while the eye and the ear, diseased, deranged, or misled, convey false impressions to the patient. Very often both the mental delusion and the physical deception exist at the same time; and men's belief of the phenomena presented to them, however erroneously, by the senses, is the firmer and more readily granted, that the physical impressions corresponded with the mental excitement.—SIR WALTER SCOTT.

THERE existed among the ancient Egyptians a singular custom of introducing, during or after their feasts, either a skeleton or a wooden image in the form of a human being, sometimes erect, and sometimes extended on a bier, as a solemn warning of the brevity of life, and the vanity of all sublunary enjoyments. The discovery of a skeleton-figure in the banquet-room after the close of a brilliant entertainment is thus described by one who is supposed to have been a stranger-guest at one of those olden feasts.

There was a female who particularly attracted my attention, on whose head was a chaplet of dark-coloured flowers, and who sat veiled and silent during the whole of the banquet. She took no share, I observed, in what was passing around; the viands and the wine went by her untouched; nor did a word that was spoken seem addressed to her ear. This abstraction from a scene so sparkling with gaiety, though apparently unnoticed by any one but myself, struck me as mysterious and strange. I inquired of my fair neighbour the cause of it, but she looked grave and was silent. . . . . I returned to the banquet-room, which was now dim and solitary, except that there, to my astonishment, still sat that silent figure, which had awakened my curiosity so strangely during the night. A vague feeling of awe came over me as I now slowly approached it. Here was no motion, no sound of breathing in that form, not a leaf of the dark chaplet on its brow stirred. By the light of a dying lamp which stood before the figure, I raised, with a hesitating hand, the veil, and saw—what my fancy had already anticipated—that the shape beneath was lifeless, was a skeleton! . . . . .

This custom among the Egyptians, of placing a mummy, or skeleton, at the banquet-table, had been for some time disused, except at particular ceremonies; and even on such occasions, it had been the practice of the luxurious Alexandrians to disguise this memorial of mortality in the manner just described. But to me, who was wholly unprepared for such a spectacle, it gave a shock from which my imagination did not speedily recover. This silent and ghastly witness of mirth seemed to embody, as it were, the shadow in my own heart. The features of the grave were now stamped on the idea that haunted me, and this picture of what *I was to be* mingled itself with the sunniest aspect of what *I was*.——FLINT.

To think too meanly of mankind is dangerous to our reverence of virtue.

A GIPSY VILLAGE.

AFTER advancing some little way through the defile, our attention was attracted by a tremendous uproar, and on turning a curve of the road, we came at once upon a gipsy village, presenting a scene not easily paralleled. Bears were bellowing, monkeys and children screaming, dogs barking, drums beating, pipers playing, women scolding, men fighting, and smiths and tinkers hammering,—altogether forming a *charivari*, which, fortunately for men's ears, does not often assail them. Nor was the appearance of these people less remarkable than their noise. The majority of the children were entirely naked, and their parents nearly so, having no covering but a pair of wide trousers, those of the women differing but little in form and colour from those of the men. The whole, whether basking in the sun, or at work, were incessantly smoking from little short pipes made of box-wood. In short, they exhibited a picture of human degradation and misery, such as I have not often witnessed, even among the most savage tribes. Their dwellings consisted merely of scattered tents, and holes burrowed into the sides of the soft limestone rocks that towered above them. Their habits appeared filthy in the extreme, for besides the stench arising from the numerous animals with whom they lived in common, the immense volumes of tobacco-smoke, and the smell of onions and garlic, formed an odour altogether so unsavoury, that we heartily wished ourselves out of its vicinity.

On hearing the sound of our horses, the whole motley multitude started on their legs and rushed towards us; when pipers, drummers, fiddlers, dancing dogs and bears, tumbling monkeys and naked children, young fortune-tellers and old witches,—all performed before us in their respective characters. A few handfuls of kopecks, for which they most reverently kissed the hem of our garments, and wished us a happy journey, delivered us from their importunities.

In the midst of all this wretchedness, I could not help remarking the well-formed proportions of the men,—their fiery eyes and animated countenances. Nor were the fine features of the women—the large, full, dark eye, and jet black hair, hanging down in natural curls on their shoulders—less admirable; and although, from continual exposure to the weather, they were nearly as dark as Indians, yet those still young were really beautiful. But this distinction does not long characterize the women of the East, particularly this migratory people, for those more advanced in life were the veriest personifications of what you might imagine witches to be,—haggard, withered, and wrinkled. ——SPENCER'S *Travels in Circassia, Krim Tartary, &c.*

RURAL SPORTS FOR THE MONTHS.

JANUARY.

THE most ancient of all bodily exercises were probably field sports. In the early ages of the world, man was compelled, as a necessary matter of self-defence, to maintain a continual warfare with such of the animals as were in a state of hostility to him; nor could he preserve the fruits of his industry, the crops he had planted, the flocks and herds he had reared, without such continued warfare.

This practice, at first urged on him by imperious necessity, was soon found to have its advantages. The flesh of many wild animals was found to supply wholesome food, and the skins of nearly all were valued as clothing, so that self-interest would not fail to prompt him to the pursuit of such animals as best supplied his wants. His reason and ingenuity were now employed to devise the most successful methods of entrapping his prey. The rude pit-fall, the trap of simple form, the noose or snare, the club, the javelin, and the spear, the simple sling, the various kinds of bow, gradually succeeded each other, until the comparatively recent period when the invention of fire-arms threw all other weapons into the shade, and presented a more certain and death-insuring method of procuring game.

It is worthy of remark that the destruction of animals, during the early age of the world, does not appear to have been followed as a *pastime*. It was a matter of necessity, and in so far as it supplied mankind with food, was in accordance with the Divine command.

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After the deluge, man was encouraged to take and eat of the animals around him: "Every moving thing that liveth shall be meat for you, even as the green herb have I given you all things." (Gen. ix. 3.)

> On Noah, and in him on all mankind,
> The charter was conferred, by which we hold
> The flesh of animals in fee, and claim
> O'er all we feed on power of life and death.
> But read the instrument, and mark it well:
> The oppression of a tyrannous control
> Can find no warrant there.

Among the ancient Greeks and Romans very different opinions prevailed at different times as to the utility of field sports. Xenophon wrote a treatise, enlarging upon the advantages of these exercises, as inuring the body to hardships and privations, and promoting courage, strength, and swiftness. In the time of Sallust, hunting was held in sovereign contempt, and abandoned to slaves. Solon forbade the Athenians to hunt, because it enticed them from more useful pursuits. When the Goths and Vandals over-ran and subjugated the Roman empire, they appropriated the privilege of hunting to their own chiefs and nobles, and ceased to acknowledge the natural right which all men were previously considered to have, of participating in field sports.

It seems likely that the earliest animals subjugated to the use of man were sheep and kine, and that their skins formed his clothing; while the milk derived from them proved an abundant source of nutriment. Yet these highly valuable animals were of no assistance to him in the conquest of other and more ferocious creatures. The exquisite powers of scent and vision, with other remarkable qualities possessed by the dog, seem to have pointed him out at a very early period as man's assistant in the pursuit of wild animals.

It is not our purpose to proceed with the history of the successive appropriation of different animals by man to the objects of the chase; or of the modes by which the capture of animals was facilitated from time to time; far less shall we attempt to show, that, in an age of refinement like ours, when the necessity imposed upon barbarians no longer exists, the enthusiam with which field sports are followed, and inoffensive creatures *preserved* for the express purpose of being hunted to death, is worthy the national character for intellectual superiority and generous feeling. Yet, taking advantage of the very general interest which such subjects are wont to excite, we propose to give, in this and the following articles, notices of the sports prevalent during the month, with an especial reference to the natural history of the animals forming the objects of pursuit. It cannot be expected that we should select on all occasions the sport which is the most universally followed at the time we write, for many favourite pastimes of this nature, prevail for several months in succession, and we should, in consequence, be bound to keep to one subject for a corresponding length of time: we shall therefore take such particular sports for description as our attention may be directed to at the time, and as are more or less followed during the month.

In the present cold and bleak season of the year, when some of our field sports are necessarily suspended, there is yet an occupation for the gunner, which is considered to possess peculiar attractions, and which has drawn many a sportsman from his home for weeks together. This is the shooting of *wild-fowl* of various kinds; an occupation fraught with much difficulty, and even danger, and in the pursuit of which, the miseries of cold and hunger, the necessity of traversing half-frozen marshes and ditches, the pelting of storms of hail or snow, are all cheerfully endured by the zealous lover of the sport.

The capture of wild ducks is that of which we shall at present speak, as being the chief branch of the sport. Many of the rivers of our southern shores present, at their junction with the sea, extensive deposits of soil and of animal matter which are alternately covered and left dry by the tide. The autumnal rains sweep a vast quantity of little animals and animal remains from the upper country, while numerous aquatic animals of a minute kind also resort to the brackish waters of such situations, on account of the warmer temperature which those waters possess over both the sea water, and fresh running streams. Where the soil of the surrounding country is rich, and the descent of the river gradual, these deposits present to the whole race of dabbling birds the grandest attractions. Where the stream comes dashing from a rocky soil, or is very limited in its course, its termination is never found to be an estuary favourable to the birds in question. On looking at the map of England, we shall see that several of our southern rivers are, as it respects the length of their course, and the nature of the country and of the soil they traverse, especially calculated for the resort of wild-fowl. In consequence, the capture of these birds is carried on to a great extent, and in a systematic manner, and the quantity taken is very considerable. The most successful method of catching is by the *decoy*, which is a pond sheltered by reeds, and containing a permanent net in which the birds are entrapped. Tame birds are trained to entice the wild ones, and are called decoy-ducks. Into the details of this mode of bird-catching we cannot now enter. A more hazardous method is pursued by men who partly depend on wild-duck shooting for their subsistence, and also by sportsmen who consider the pleasure rather enhanced than lessened by the difficulties and risks they incur. These pursue their occupation principally in small punts or boats, and are called punt-shooters, or punt-gunners. Sea-fowl usually come down to feed by night in the oozy ground before described. Towards evening, therefore, the fowler runs up his boat into a creek, and lies in patient expectation of his prey. Gilpin, describing the coast of Hampshire and the fowler's employment there, says that the flight of wild ducks as they approach the feeding-place, may be compared to a pack of hounds in full cry, so noisy are they in their language. The gunner listens attentively to ascertain which way they bend their flight, and has perhaps the mortification to find that they have alighted at too great a distance to allow of his getting a shot at them; but if he happens to be more fortunate, and finds them alighting on the plain, to the edge of which he has moored his little boat, he primes both his pieces,—for he generally carries two,—and again endeavours to find out the situation of the birds by listening, the nights favourable to the fowler's sport being exceedingly dark. The birds are silent while feeding, but the motion of such a number as generally feed together is sufficient to produce certain indistinct sounds, by which the fowler is guided where to take aim. He fires at a venture, and immediately takes up the other gun and discharges it where he supposes the affrighted flock to be rising on the wing. This concludes his chances of success for that night, and he has now nothing more to do than to tie to his feet flat pieces of board, called mud-pattens, and, thus protected from sinking in the ooze, to grope about in the dark in quest of his booty, which may consist of many birds, or may be almost nothing. The danger attending this employment is, lest the fowler should get fixed in the mud so as to be unable to extricate himself, and thus get overtaken by the returning tide. The cold is also so severe as to expose the less inured follower of the pursuit, to ill consequences to his health. Even in the day-time, the risk of such expeditions is considerable, as the following anecdote will be sufficient to show:—

Mounted on his mud-pattens, a fowler was once traversing one of these oozy plains in search of ducks, and, being intent only on his game, suddenly found the water, which had been accelerated by some peculiar circumstance

affecting the tide, had made an alarming progress around him, and he found himself completely encircled. In this desperate situation an idea struck him as the only hope of safety. He retired to that part which seemed the highest, from its being yet uncovered by water, and striking the barrel of his long gun deep into the ooze, he resolved to hold fast by it, as well for a support as a security against the waves, and to wait the ebbing of the tide. He had reason to believe a common tide would not have flowed above his middle; but in the midst of his reasoning on the subject, the water had now reached him. It rippled over his feet, it gained his knees, his waist, button after button was swallowed up, until at length it advanced over his shoulders. With a palpitating heart he gave himself up for lost. Still, however, he held fast by his anchor; his eye was eagerly in search of some boat which might accidentally be passing, but none appeared. A head upon the surface of the water, and that sometimes covered by a wave, was no object to be descried from the land, at the distance of half a league; nor could he exert any sounds of distress that could be heard so far. While, as the exigence would allow, he was thus making up his mind to certain destruction, his attention was caught by a new object. He thought he saw the uppermost button of his coat begin to appear. No mariner floating on a wreck could behold approaching succour with greater transport than he felt at this transient view of the button; but the fluctuation of the water was such, and the turn of the tide so slow, that it was yet some time ere he durst venture to assure himself that the button was fairly above the level of the flood. At length a second button appearing at intervals, his sensations may rather be conceived than described, and his joy gave him spirit and strength to support his situation four or five hours longer, until the waters had fully retired.

It might have been imagined that dangers such as these, would cause excursions of this nature to be undertaken by those alone, who get their livelihood by selling wild-ducks; but this is so far from being the case, that we find a practiced sportsman referring with enthusiasm to what he calls his "wild-fowl shooting mania," when he used, after spending many hours of the day on Lewes Levels, and pursuing his sport with an ardour which he confesses himself unable to defend, inasmuch as it risked the health and life of both him and his servant, to return again in the evening to watch the night-flights, and still to carry on his sport. Nay, so fascinating is the pursuit of these birds, that he assures us from his own knowledge, that some persons, in order to enjoy the sport in greater perfection, have fitted up a small sailing smack with sleeping berths, cooking conveniences, suitable attendants, a row boat for creeks, a punt for oozes, two or three water-dogs, &c., and thus equipped have made a coasting voyage half round our island. When we remember the season of the year during which this sport is chiefly practised, viz, from about the middle of October to the end of February, we shall be able to appreciate the extraordinary degree of enthusiasm necessary to carry a man through such an expedition. By a recent Act of Parliament, it is made illegal to kill wild-fowl, either young or old, from the last day of March to the first day of October.

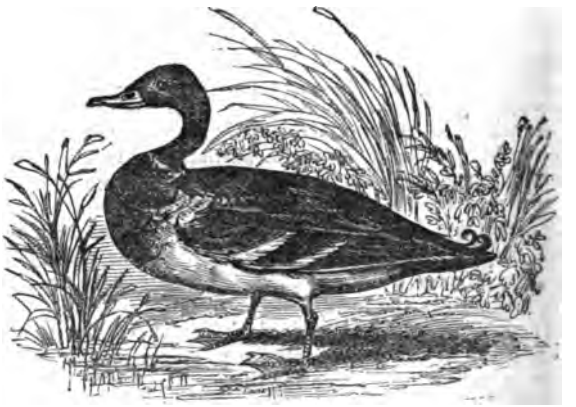
The common wild-duck is the largest in size of the species that frequent this country. The general name *duck* is taken from the female, the male being the *mallard*, or drake, and the young birds, *flappers*. The length of a full-grown mallard is nearly two feet, the stretch of the wings three feet, and the weight about two pounds and a half. The head and neck are of a fine dark glossy green colour; a white collar encircles the throat; and below it, the neck, breast, and shoulders are of a purplish brown. The scapular feathers are a mixture of silver-white and rust colour, streaked with brown. The wing-coverts are ash-coloured with black and white tips. The wing-spot is rich purple, with reflections of blue and green. The lower part of the back is black, and the four middle tail-feathers are curled up in the mallard. The under part of the body is whitish grey, with slight mottlings of brown. The duck is considerably smaller than the mallard, and has not the green and white on the head and neck. She is also without the curled feathers on the tail.

Wild-ducks are not inferior to many other birds in a remarkable instinct for the preservation of their young, or of their mates. Captain Back relates, in his *Arctic Land Expedition*, that one of his companions having killed a female duck, fired again, and as he thought disabled its companion, a fine drake. Accordingly, leaving the dead bird, which he had the mortification of seeing, in a few minutes afterwards, carried off by one of the white-headed eagles, he waded after the drake, which, far from being alarmed, remained motionless, as if waiting to be taken up. As he drew nearer, it glided easily away, through innumerable little nooks and windings. Several times he extended his arm to catch it; and having at last with great patience managed to coop it up in a corner, from whence there appeared to be no escape, he was triumphantly bending down to take it, when to his utter astonishment, after two or three flounders, it looked round, cried "quack," and flew off so strongly that he was convinced he had never hit it at all. The object of the bird had evidently been to draw away his attention from its companion, of whose fate it was ignorant.

The nest of the wild-duck is in general artfully concealed among herbage, in the vicinity of water. It has been known, however, to build in trees, and in bushes. The ducklings are numerous; often as many as sixteen are hatched at once, and unless some casualty happens to the nest, there is only one brood during the season.

There are about twenty-eight species of ducks which are seen more or less frequently in different parts of Great Britain and Ireland, and principally during the winter season. Many of these visitants are evidently natives of northern countries, and appear in great numbers on our northern coasts; but of the flights which appear still more abundantly in the fenny districts, such as those of Lincolnshire, Cambridge, and Martin Mere in Lancashire, on the borders of many rivers in Wales, and on the southern flat shores and estuaries of England, we are not well informed as to their retreats when they quit our shores.

In this family of birds there are many species besides the wild-duck commonly so called, which deserve to be spoken of particularly. These we must leave for a future occasion, together with several other notices, relating to wild-fowl in general.



THE MALLARD, (*Anas Boschas*, LINN.)

THE force of an argument is not increased by the excitement of the feelings or the display of temper.—MACCULLOCH.

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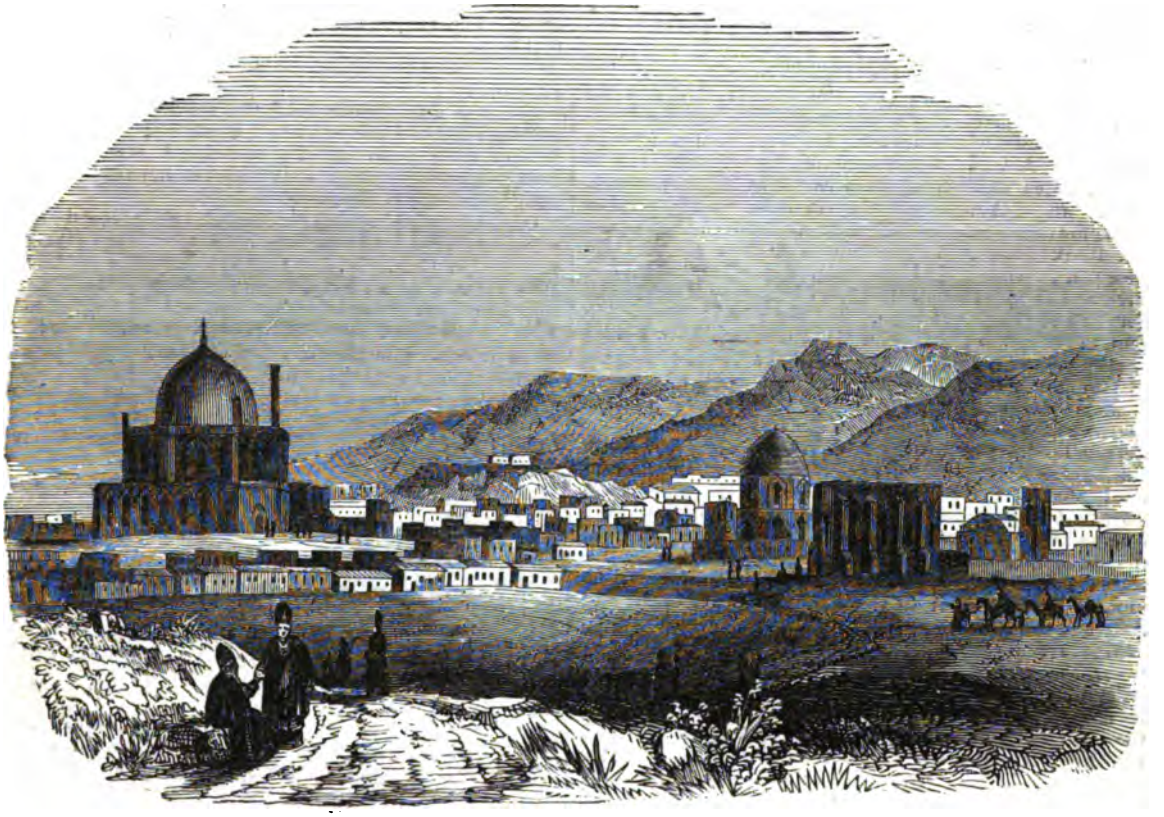
OVERLAND JOURNEY FROM INDIA TO ENGLAND.



SULTANIEH, IN NORTHERN PERSIA.

FIRST ROUTE.

BY WAY OF THE PERSIAN GULF, THROUGH PERSIA AND RUSSIA, TO ST. PETERSBURGH.

ONE of the most extraordinary features in the political geography of the present age, is the possession by Great Britain of a vast empire situated many thousand miles from the parent country, and separated from it by countries, some of which are mountainous and inhospitable,—others parched and sandy,—and others inhabited by nations and tribes hostile to British interest. Such is *India*, or the *East Indies*. The British empire in India is incomparably larger and more populous than the whole of the British Isles; and it may well be supposed that the establishment of a rapid mode of communication from India to England, is regarded as a matter of high importance by the government. This communication, so far as regards the transport of troops, of military stores, of articles of commerce, &c., must obviously be made by sea; since such conveyance cannot be made through the territories of other nations. The establishment of steam navigation round the coast of Africa;—the project for connecting the Persian Gulf with the Mediterranean, by cutting a canal from the last-named sea to the river Euphrates;—and for connecting the Red Sea with the Mediterranean, by cutting a canal across the Isthmus of Suez;—all have for their object the attainment of a more speedy water-conveyance from India to England.

But it has often happened in the past history of our Indian affairs, that British officers have been despatched overland from India to England, either for the sake of greater expedition, or for diplomatic services at the court of some one of the Oriental princes whose dominions lay in the line of route. These overland travels are among the most interesting narratives which we have of the appearance of the Asiatic towns and cities, and of the manners and customs of the inhabitants; and we have long thought that the readers of our Magazine would welcome a brief and popular account of such routes. The modes in which various officers have proceeded from India vary greatly. Sir Alexander Burnes proceeded from the north-west of India to Bokhara, and from thence to the southern shore of the Caspian Sea:—Sir James Alexander went by sea from Bombay to the Persian Gulf, and from thence through Persia and Asia Minor to Constantinople:—Captain Keppel likewise went by sea from Bombay to the Persian Gulf; but proceeded thence through Persia, Georgia, and the Russian empire to St. Petersburg:—Lieutenant Lumsden, after landing on the shore of the Persian Gulf, proceeded through Persia and Armenia, round the northern shore of the Black Sea, and through Austria and France to England:—Colonel Fitzclarence (now Earl of Munster) went by sea from Bombay to the Red Sea, landed at Cosseir, and travelled through Egypt to the Mediterranean; a similar route to that pursued a few years afterwards by Mrs. Charles Lushington. Other travellers and officers have gone westward from India to Persia, through the imperfectly-known regions which separate them. From this it will be seen that the term "overland journey to England" is capable of many significations.

We propose to select some one particular route, and conduct the reader through it, describing the most interesting objects which occur by the way. By this arrangement, each Supplement will be complete in itself; and we may devote as many Supplements to the topography of Central and Western Asia (for such in reality is the nature of the subject) as the interest of the details will

warrant. On the present occasion we will select the route by sea from Bombay to the Persian Gulf; and thence overland through Persia, Georgia, and Russia, to St. Petersburg; from whence a ship conveys the traveller to England by way of the Baltic Sea.

It will be necessary for the reader to have a tolerably clear idea of the situation of India with regard to the western parts of Asia; and the inspection of a map will greatly aid him in forming this idea. Africa is separated from the south-eastern point of Asia by the Indian Ocean; and into the northern part of this ocean juts the peninsula of India, or Hindostan, which extends northward to the Himalaya mountains. Westward of India are the countries of Beloochistan, Caubul, Bokhara, &c., forming the western boundary of India, and separating it from the Persian empire. From the north-western part of the Indian Ocean, issue two seas, the Persian Gulf and the Red Sea, each proceeding nearly in a north-westerly direction, and including between them a large peninsula which constitutes Arabia. Northward of the Persian Gulf is Persia, which extends upwards as far as the Caspian Sea. Northward of Arabia is Turkey in Asia, which brings us to the Mediterranean and Black Seas. Between the Caspian and Black Seas, is a mountainous district occupied by Georgians, Armenians, Circassians, and other tribes, and forming a general though ill-defined boundary between the Persian and Russian empires. The river Euphrates, which empties itself into the Persian Gulf, is navigable to a point so near the Mediterranean, in the neighbourhood of Aleppo, that proposals have been made to cut a canal of communication from one to the other. From the Caspian Sea to the nearest point of India, in a straight line, is about one thousand miles; from the northern part of the Persian Gulf, about twelve or thirteen hundred; from the eastern-most point of the Black Sea, about two thousand miles. To travel from India to Turkey, therefore, by land, is a long and wearying journey, even if the political situation of the interjacent countries offers no obstacle. It is for this reason that the greater number of "overland" travellers proceed by ship either to the Persian Gulf or to the Red Sea; and from thence reach Europe by land.

Where the passage from India to Persia is made by water, the point of embarkation is generally Bombay. The British empire in India, being too extensive to be governed by one officer, is divided into three *presidencies*, of which the chief cities are Calcutta, Madras, and Bombay. Each presidency is under one governor or chief officer, but the governor of Calcutta is superior in authority to the other two, and possesses the title of Governor-general of India. Of the three principal cities just named, Calcutta is at the north-eastern extremity of the peninsula of Hindostan; Madras is on the eastern shore of the peninsula, opposite the Burman empire; and Bombay is on the western shore, and consequently nearer to Europe than either of the other two presidencies. Shipping is found in considerable extent at Bombay; and this is the port from whence the "overland" travellers proceed to the Persian Gulf or to the Red Sea.

From Bombay to the mouth of the Persian Gulf is a distance of about thirteen hundred miles in a straight line; and probably fourteen or fifteen hundred in the direction which a ship would take. We will therefore imagine ourselves to be embarked on board a ship at Bombay, and to have traversed the Indian Ocean which separates India from the Persian Gulf.

The first land at which we arrive is Arabia, which forms the western margin of the entrance to the gulf. This margin proceeds in a tolerably straight line for about four hundred miles in a north-western direction, when it brings us to the narrow strait which forms the immediate opening into the gulf, having Persia on the right hand, and Arabia on the left. About midway on this north-western coast is the Arabian port of *Muskat*, one of the most important belonging to that country. Muskat is the capital of the Arabian province of Oman, which, if not the most celebrated, is the most flourishing and prosperous part of the country. Muskat was taken by Albuquerque in 1507, and remained subject to Portugal till 1648, when the natives drove out the Portuguese. The province is now governed by an Imaum, or spiritual chief, who seems to exercise his power in a very judicious manner; and the port of Muskat is said o be the best managed of any in Arabia or Persia; for the merchandize of the East may be left undisturbed, or its wharfs and quays without molestation,—a degree of security due to the excellent police of the place. All the ports upon this coast are tributary to the Imaum of Muskat; and he has also established a considerable trade with the interior by means of caravans. High rocks on one side, and the island of Muskat on the other, form a spacious and secure harbour. The town is surrounded by a strong wall, within whose precincts none but Arabs and Banians are allowed to reside; all strangers being obliged to remain in houses outside the wall. The town contains a bazaar or market, covered in at the top to protect the wares, which are exposed for sale on open platforms in front of the shops. A large colony of Indians, principally from the banks of the Indus, carry on the wholesale and retail trade. The houses are flat-roofed, and built of unhewn stone. The streets are extremely filthy, and so narrow, that by extending the arms across, both sides may frequently be touched. The inhabitants are affected with a peculiar inflammation of the eyes, arising, it is said, from the light particles of sand blown from the sea-shore. Mr. Buckingham estimated the population at 10,000; while Captain Keppel some years afterwards reduced the number to 2000;—such is the uncertainty which often exists respecting the population of Oriental towns.

On embarking again at Muskat, we proceed north-westerly till we arrive at Cape Musseldom, the entrance to the Persian Gulf. Nearly opposite this cape is Ormuz, once the seat of a very extensive commerce, and, in the time of Albuquerque, one of the most splendid cities of the East. Subsequent conquests completely ruined it; and when it came into the hands of the present possessors, it did not contain twenty houses.

Entering the Persian Gulf, we pass by the celebrated pearl banks of Bahrein, near the coast of Arabia; and opposite to this, on the Persian coast, is the town of Bushire, where travellers often land who wish to proceed to the eastern parts of Persia. As our route, however, carries us to the regions of the Tigris and the Euphrates, we will leave Bushire, and proceed up the gulf which leads to them. These two rivers, of which we have earlier records than of almost any other rivers in the world, empty themselves into the Persian Gulf by mouths common to both rivers, and thereby form a delta, similar to those at the mouths of the Ganges, the Nile, and the Missisippi. Proceeding a little way up the largest of these, we come to Bassora, a town of much commercial importance, where we will land.

Bassora absorbs nearly all the foreign commerce of Persia and the Euphrates. It is seven miles in circumference, a great part of which space is laid out in gardens and plantations; and is intersected by canals navigable for small vessels. Its most important trade, being that with India, is carried on partly by British, but chiefly by Arabian vessels, of which those of five hundred tons burden can ascend the river to this point. The inhabitants are estimated at 60,000; a heterogeneous mixture of Arabs, Turks, Indians, Persians, and all the people of the East. They have not expended much of their wealth in the embellishment of the city; for travellers describe it as having, generally speaking, a mean and dirty appearance.

In order to give an idea of the appearance, the costume, &c., of the inhabitants, we will describe the public entrance of a Pacha, which took place while Captain Keppel was in Bassora. A body of armed men, forming an advanced guard, announced their approach by a continued discharge of muskets, and passed at a slow trot. Then came another party, who occasionally halted, and danced in a circle; beating time by striking their swords against each other's shields. These were followed by large parties of Desert Arabs, of the Zobeir tribe, preceded by their immediate petty chiefs, on horseback: each of them had carried before him a large red and green flag. The Zobeir Arabs are mercenary troops, and acknowledge a kind of subjection to the governor. They are small mean-looking men, with an Indian cast of features; they carried either fire-arms, or swords and shields; and were habited in various ways —some having on robes bound at the waist with a girdle, others a loose shirt. After these Arabs came the *Toofungees*, or personal troops of the Pacha, distinguishable by fur caps nearly a yard in diameter. Then the Pacha's led horses, richly comparisoned; and after these a troop of mounted Tschousses, or messengers, beating small drums placed at the saddle-bow. These were followed by the native officers of the English factory, mounted. Then came the Capitan Pacha, the Cadi, and the Mufti; and lastly, the Pacha himself, who, with his hand on his breast, acknowledged the shouts of the by-standers. A troop of Janissaries

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brought up the rear, amid the firing of muskets, the beating of tomtoms, the rude singing of the soldiery, the music of the Janissaries, and the shrieking of groups of women.

From Bassora we proceed along the Tigris to the far-famed city of Bagdad, the scene of so much legendary interest. The usual mode of proceeding from one town to the other, is on board one of a fleet of boats which go in company, in order to protect the passengers from the attacks of the tribes of wandering Arabs who infest the banks. Sometimes, however, a party of travellers hire a Bughalow, which is a vessel sixty feet long, fourteen wide at the broadest part, and having a low cabin about ten feet square.

Proceeding up the river by either one of these modes of conveyance, we come to the point of confluence of the Tigris and the Euphrates, the former being the easternmost of the two. The banks of the river, between Bassora and Bagdad, a distance of between three and four hundred miles, are occupied by tribes of Arabs, in the same state of primitive simplicity as these remarkable people have ever shown; living in mat huts, capable of being moved at a short notice; dressed in a brown shirt with open sleeves, and bound round the loins with a leathern girdle; almost as unacquainted with Europeans as the inhabitants of Central Africa:—such are the Arabs on the banks of the Tigris.

Farther up the river we come to a tract of country which, though now a desert, was once beautified by large and populous cities. Among these we find the ruins of Seleucia and Ctesiphon. The former of these founded its grandeur on the ruin of the more ancient city of Babylon, and contained at one time 600,000 inhabitants. Seleucia was, in its turn, superseded by Ctesiphon; but both have been since so utterly destroyed, that nothing but ruins attest what they once were. These ruins, together with sandy deserts, and occasionally a jungle tenanted by wild beasts, fill up the interval from Bassora to Bagdad: we will therefore suppose ourselves now to have arrived at the last-named city.

The tract of land which separates the Tigris from the Euphrates, during the lower portion of their course, is rather narrow, and very flat and level; so that in the rainy season the two rivers frequently overflow, and irrigate the land, whereby it becomes very luxuriant. It is probably this circumstance which gave to this strip of land so high importance in ancient times. Under the names of Babylonia, Chaldea, and Mesopotamia, it was a region covered with famous cities, which were celebrated both in sacred and profane history. Of these large cities, the only one which is at present a place of much importance is Bagdad, a spot which is not connected with the times mentioned in the Sacred Records, but which some centuries afterwards became the seat of the Caliphs.

The city of Bagdad stands on both sides of the Tigris, the western or ancient part being now regarded as a kind of suburb to the more modern part, which stands on the eastern bank of the river. The form of the new city is an irregular oblong, about 1500 paces in length, and 800 in breadth; and a brick wall, five miles in circumference, encloses the two towns, which have a wretched bridge of communication between them, formed of pontoons. At the principal angles of the wall are round towers, with smaller towers intervening at short distances: and on these towers batteries of cannons are placed. There are three entrance-gates through this wall to the town; one on the south-east, one on the north-east, and a third on the north-west. Intricate as are the streets in most Oriental towns, they are still more so in Bagdad; for, with the exception of the bazaars and some open squares, the interior is little else than a labyrinth of alleys and passages. The streets are unpaved, and in many places so narrow that two horsemen can scarcely pass each other; and as it is seldom that the houses have windows towards the street, and as the doors are small and mean, they present on both sides the gloomy appearance of dead walls. All the buildings, both public and private, are constructed of furnace-burned bricks, of a yellowish red colour, taken chiefly from the ruins of the neighbouring ancient cities. A house is generally laid out in ranges of apartments opening into a square interior court, and furnished with subterranean rooms, into which the inhabitants retreat during the day for shelter from the intense heats of summer. The tops of the houses have terraced roofs, on which the inmates take their evening meal, and often sleep in the open air. As the houses are but thinly scattered over the area enclosed by the city wall, there is a large extent of garden ground, which produces pomegranates, grapes, figs, olives, dates, and other Oriental fruits in great perfection. As in all Mohammedan cities the mosques are conspicuous, so are they in Bagdad, where the number is said to amount to as many as one hundred. These mosques are, in their external and internal features, much like those of Turkey generally; but a deficiency of splendour is observable in most of them. The khans or caravanserais amount to about thirty in number; the baths or hummums to about fifty; and there are several bazaars.

The manners and customs of the inhabitants closely resemble what we are accustomed to meet with in Oriental cities. An English officer and his friends having solicited the honour of an interview with the Pacha, the Pacha's secretary sent some of his servants to accompany the visitors. On entering the gates of the palace, they came into a spacious court, where the Pacha's troops were drawn up, to present arms to the English visitors. On arriving at the gates of the inner court, they dismounted; the principal officers of the palace then ushered them through a double row of Janissaries, into the presence of the Pacha. The hall of audience was fitted up in the usual Oriental style, and decorated with numerous small looking-glasses. In one corner of the room was seated the Pacha, supported by cushions. Chairs were placed for the visitors; who were likewise favoured by being allowed to keep on their hats and *shoes*. With regard to this latter custom we may remark, that the removal of shoes from the feet on entering an Eastern apartment is not so wholly ridiculous as Europeans are sometimes apt to suppose; for as the meals are served up on trays laid on the floor, there is obviously a reason for keeping the floor as clean and unsoiled as possible. The visitors were then regaled with the usual delicacies of an Eastern city; and took their leave after a courteous reception from the Pacha.

We must now leave Bagdad for the north, and will take the same route as Captain Keppel, who went some distance eastward of the direct course, in order to visit the royal city of Teheran, near the southern coast of the Caspian Sea. The manner in which Captain Keppel and his friends travelled, was to form a kind of caravan among themselves. They purchased three tents, hired twenty-four mules to carry their servants and baggage, and provided themselves with two saddle-horses each. They then proceeded on their journey, having received a *firman* from the Pacha, exempting them from all tolls and exactions till they reached the frontiers of the Persian empire.

After leaving Bagdad, we arrive at the ruins of the ancient city of Artemita, the favourite city of Chosroes, king of Persia, in the time of Heraclius. The first ruin seen, is a square mound of bricks, facing the cardinal points, which was probably the site of some temple in the suburbs of the city. A mile beyond this mound are numerous others, arranged with such regularity as to seem to indicate a succession of streets at some former period. At the western extremity of these ruins is a mound larger than the rest, supposed to have formed the foundation for the royal residence. Before and about this mound are several large grassy plats, which appear not to have been built upon, and which were probably gardens belonging to the palace. The whole of the mounds are surrounded by what appear to be the vestiges of a wall, with circular bastions, and here and there vacancies which were probably occupied by gates. This place is now called by the Arabs Kurustur.

Proceeding northward from Kurustur, we come to Shehreban, a town situated in such an unprotected plain, that it is liable to repeated attacks from the marauding Arabs and Koords living in the neighbourhood. The city, therefore, which had been some time previously one of the most flourishing in the Pashalic of Bagdad, contained only three families at the time Captain Keppel and his friends visited it. Near Kurustur is a singular-looking building, formed of bricks about fourteen inches square, and connected together by a hard and beautiful cement. The eastern side of this building presents sixteen well-formed bastions, twelve of which are yet entire; and the eastern face shows a flat wall, with a regular ascent up to each bastion. Each bastion is about thirty feet high; and the spaces between the bastions are fifty-eight feet. What was the original purpose of this building we cannot now learn: the Arabs, with their usual love of the supernatural, state that it is inhabited by *genii*, who cut off the heads of all who presume to enter within certain loop-holes which are visible in the walls.

Shortly after passing this place, we arrive at the boundary between the Turkish and Persian empires, and which was likewise the boundary between the celebrated empires of

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Assyria and Media, upwards of 2000 years ago. Here an incident occurred to the party of Captain Keppel, which, as it illustrates the predatory habits of the inhabitants of those districts, and the nefarious agreements often entered into between them and the governors of Turkish or Persian provinces, we will relate in that gentleman's own words:—"Soon after daybreak, as Mr. Lamb and I were riding together, some hundred yards in advance of our party, three men on horseback came suddenly into the road from among the rocks, at one of the narrow passes of the mountain, fifty paces in advance of us, and seemed to regard us with no small degree of attention. He who appeared to be the chief of the party, was mounted on a black horse. They continued to march a short distance before us for several miles, frequently slackening their pace till we came up, and then moving on more briskly.

"When we arrived near the end of our stage, they turned back, and allowed us to pass, giving the usual traveller's salutation of 'Peace!'—a phrase little in consonance with their hostile intentions. After we had passed them some distance, they struck into the mountains, and were soon out of sight.

"Our conjectures respecting them, as it afterwards appeared, were not without foundation. On our arrival at Kermanshah, a young Arab chieftain informed us, that twenty Koords of the Calor tribe, one of the most numerous and powerful of Koordistan, had followed us from Khanaki, for the express purpose of plundering our party, and of murdering us if we made any resistance; of this party twelve were on horseback, and eight on foot, armed with matchlocks. The chief, who he told us rode a black horse, exactly coincided in description with the person we had seen. The Arab said they had been watching night and day for a favourable opportunity to put their plan into execution; but always finding us so much on our guard, had never thought fit to make the attempt, and had been ultimately obliged to abandon their purpose, on arriving at the mountain pass of Pac-Tackht, where a military force was stationed.

"Their chief inducement to attack us, was the intelligence they had received from Bagdad, that our party consisted of an ambassador and his suite, travelling with a large treasure; the danger we were led into by this honour is another of the obligations we owe to Aga Sakeis. They were deterred from attempting their purpose, by the dread of the European officers at Kermanshah revenging our deaths, and their extravagant notions of European prowess and skill in arms; which (notwithstanding their numbers) made them consider the result of an attack too doubtful to hazard, even for the abundant harvest they expected to reap." On questioning the informant farther, it was found that he was himself an intimate friend of the leader of the band, but had divulged their secret from a sense of gratitude to the English for services received from Mr. Rich, British resident at Kermanshah; and also that the band was under the protection of one of the principal courtiers at Kermanshah, who shared in its booty, and shielded it, through his influence in that corrupt government.

We now approach the city which we have lately frequently mentioned, and proceed to give a description of it, chiefly from the observation of Mr. Buckingham.

Kermanshah is situated on three or four gentle hills, at the foot of a range which is passed on approaching it from the west; so that it contains within its walls some slight and some steep ascents, with eminences of different heights, and their corresponding valleys. To the north and east it is bounded by a beautiful and extensive plain; and on the other side it is enclosed by a range of mountains. The form of the town is irregular, approaching to a circle of about a mile in diameter. The wall which surrounds it is flanked with circular bastions, with turrets, loop-holes, ports, &c.; and this wall is pierced with five gates. One of these gates has the name of Durwazé Nedjef Asheref, meaning the "gate at which a saint dried up the sea." The legend connected with this name, and believed by the ignorant inhabitants of the town, is this:—In the time of Imaum Ali, there was a large lake here, by the side of which a poor man was sitting, shaving the hair from his legs and body, when his razor and stone fell into the water. The Imaum coming by at the time, and witnessing his distress, inquired into the cause of it; and finding that the Faqueer was a holy man, ordered the lake to be dried up, which it instantly became at his word, and has remained dry land ever since.

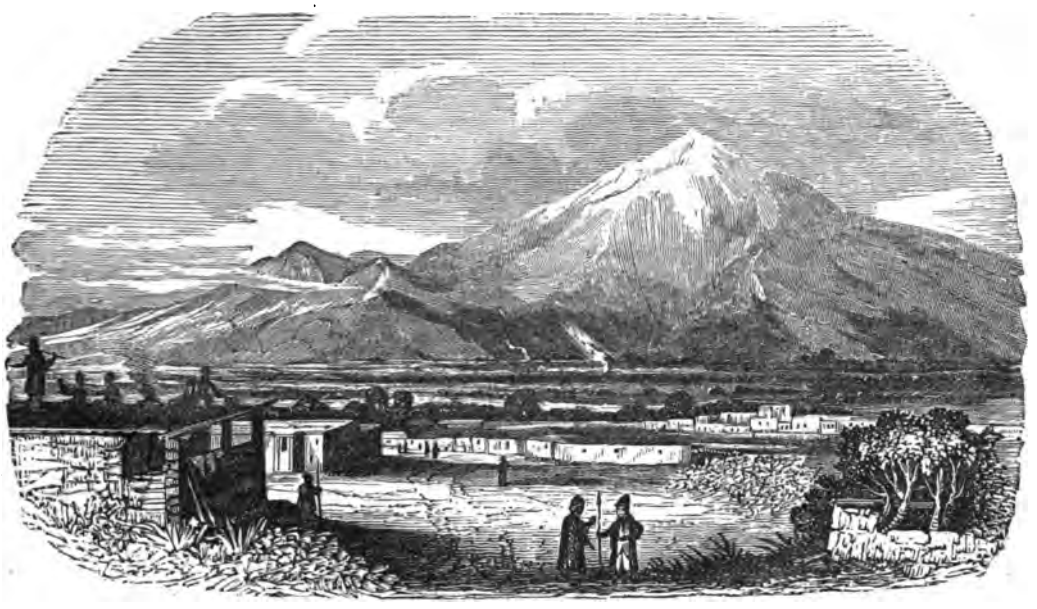
Sixty years ago, Kermanshah was nothing more than a large village, the inhabitants of which subsisted chiefly their agricultural labours in their own plain, and by the feeding of their cattle on the neighbouring pastures. As a frontier town in the west was wanting, however, as a safeguard in case of a war between Persia and Turkey, Kermanshah was fixed upon as the residence of one of the Shah of Persia's sons. Since that period the town has gradually increased in size, in population, and in affluence. During the visit of M. Rosseau, French consul at Kermanshah, in 1807, he estimated the inhabitants at sixteen or eighteen thousand. Twenty years afterwards Mr. Buckingham estimated them at more than thirty thousand.

The prince holds sovereign sway over the neighbouring territory; and is said to be as powerful a governor as the Shah himself. Being in a manner the founder of the town in its present state of opulence, he takes a pride in embellishing it with public works. A large palace, near the centre of the city, for himself, a country-house surrounded by gardens, for his harem, and a spacious mosque near his own palace for the public use, have been built from his own funds, without any extraordinary contributions. The whole range of streets, bazaars, caravanserais, baths, &c., recently erected, are, however, built from funds advanced by their future occupiers, in loans to the prince, on the faith of his promise that the sums shall be accounted for in their annual rents. The prince is therefore the great owner of the land and buildings; and, as his will is law, there is little doubt, as Mr. Buckingham remarks, that the rents will be so regulated as to return him an enormous profit; in which case, instead of a munificent adorner of a city of his own founding, he can only be regarded as a monied speculator, in possession of an unrestrained monopoly.

The prince's palace is situated on one side of a large maidan, or open square, the other three sides of which are occupied by shops, stalls, and entrances to bazaars. The palace front is about a thousand feet in length, and the ascent to its centre is by an inclined plane. Leading off from the top of this ascent are two long causeways or galleries, going all along the front of the building, at the height of fifteen or twenty feet from the level of the square below. The whole of the front is a plain brick wall, excepting only the centre, where two or three stories rise over the door of entrance. Above this entrance is the public divan, which has an open balcony, looking out on the square, and from which the view of the town and the country is commanding and agreeable. Here the prince sits for an hour or two early in the day, to transact public business and receive visits; but as the sun shines strongly on it at that period, it is then always covered by a perpendicular awning or curtain.

The interior fittings of the palace; the baths, with the process (so long and complicated to an European) of bathing; the mosques; the bazaars, &c., at Kermanshah, so nearly resemble what we are accustomed to read of Oriental towns generally, that we pass over those details, quit the town, and conduct the reader onward in his journey.

The direct route from Kermanshah northward would leave Teheran on the right; but as that city is the residence of the Persian Shah, we will accompany Captain Keppel in the route to Russia *viâ* Teheran. At about five days' journey from Kermanshah, we arrive at Hamadan, another considerable town, the inhabitants of which may be characterized by a brief description of the chief visitors who came to welcome Captain Keppel's party, on the morning after their arrival. The first was the Prince of Hamadan's physician, an elderly man of very amiable manners, and possessing a degree of liberality of opinion and general information rarely to be met with in an Oriental physician: he frankly acknowledged the superior skill of the European physicians, and begged a medical gentleman forming one of the party to prescribe for him. A Jewish Rabbi then paid them a visit, and gave an affecting detail of the persecutions which the Jews suffered from the Mohammedans: his bitter complaints were directed, not so much against the sovereign authority of the place, as against the petty and incessant ill-usage of the mass of the Mohammedan people. Then came the chief of the Armenians resident in the town: the Armenians, as the reader is probably aware, are Christians belonging originally to the districts at the south-east of the Black Sea; and this visitor gave a detail of ill-usage and cruelty similar to that of the poor Jewish Rabbi,—for the "unbelieving Jew," and the "Christian dog," are equal objects of hatred among the Mohammedans,



MOUNT ARARAT.

except that the temporal power and influence possessed by the European Christians make them objects of fear to the Mohammedans. The next visitor was a distinguished Persian, who had been busily engaged in a search for the "philosopher's stone;" and who fancied that the English travellers were engaged in a similar pursuit; since he heard that they had been exploring old ruins, and had by them certain acids and chemical tests with which they determined the geological character of fragments of rock which they from time to time collected. They soon undeceived him; and endeavoured to convince him of the utter worthlessness of the pursuit in which he was engaged. The last visitor we shall name was a money-lender, whom we shall introduce to show the estimation in which the English character is held in Persia for probity and honour in commercial dealings. One of the party wishing to draw a bill on Bagdad, and to get it cashed at Hamadan, sent to inquire how that might be done. A miserable-looking man soon appeared, who from beneath his tattered garments drew forth a bag containing the requisite quantity of gold coin. This he readily gave, and received in exchange nothing more than a piece of paper with an order (in English) for payment at Bagdad. The party wondered at such a proof of unlimited confidence, for the man could not read a word of the order; and were not a little gratified to hear him say in explanation:—"The Ingrees (English) have never been known to deceive." Sir John Malcolm had been some time resident in Persia, and had, by his high personal character, contributed greatly to this favourable impression concerning the honour of an Englishman. We may say in connexion with this subject, that British officers resident in Persia, recommend English travellers in that country to wear English costume, as it generally meets with respect.

From Hamadan a pleasant district conducts the traveller to *Teheran*, the usual residence of the court of the Shah of Persia. This city occupies a position once forming part of the ancient empire of the Medes, near the southern shores of the Caspian Sea. Its political importance as the seat of government is more striking than the beauty of its situation; for the numerous spring torrents, which pour from the adjacent heights at the beginning of the warm season, saturate the low ground about the town, sink into its vaults, and send up such vapours and dampness as to render the spot very insalubrious during that season of the year.

Teheran is surrounded by a deep ditch, towers, and a mud wall, embracing a circuit of about eight thousand yards. There are four entrance gates, leading respectively to Ispahan, Tabriz, and two mountainous districts: they are plain in structure, with the exception of a few ornamental blue and green tiles. The streets of the city are extremely narrow, and full either of dust or mud, according to the season; the limited width, too, is rendered more inconvenient by the prevalent custom of the nobles to ride through them attended by thirty or forty servants on horseback; and by the frequent passage of loaded camels, mules, asses, and sometimes the royal elephants. The imperial palace splendid as it is within, presents a similar want of external elegance to most other Persian dwellings; it is situated in the citadel, a distinct quarter of the city, occupying a square of twelve hundred yards, and surrounded by its own bulwarks, which adjoin the north wall of the town. At one particular part of the city is a large open space or square, full of wide and deep excavations, or rather pits, sunk in the ground. Within the shaft of these well-like places, and round its steep sides, are numerous apertures, leading to subterraneous apartments; some the sojourn of poor houseless human beings, and others, a temporary stabling for beasts of burden.

After illustrating the extremely narrow and confined arrangement of the streets, Sir Robert Ker Porter observes: "Where any place does present a little more room than ordinary, or under the covered ways attached to the shops, we generally find one of the national story-tellers, surrounded by groups of people, some well clad, others in rags, and not a few nearly naked, attending with the most lively interest to tales they must have heard a thousand times before. He recounts them with a change of gesticulation, and a varied tone of voice, according to his subject; whether it be the loves of Khosroo and Shireene, the exploits of Rustum their favourite hero, or any number of historic couplets from Terdousi, the Homer of their land. From the humblest peasant, to the head that wears the diadem, all have the same passion for this kind of entertainment."

On leaving Teheran, the route conducts us along a considerable portion of the western shore of the Caspian Sea, through a district of a very mountainous character, and inhabited by rude mountaineers, who have cost Russia more trouble and campaigning than any other of her subjec s.

There is no particular town after leaving Teheran till we arrive at Casbin, about a hundred miles distant. This town is the residence of a Prince Governor, and was once the capital of the kingdom; it has undergone a great change of fortune, but is sufficiently populous to carry on a tolerably extensive trade. We have taken a few opportunities of illustrating the manners and customs of the Persians as we proceeded; and the following account of the visit of an English officer to the Prince of Casbin will illustrate the fondness of the Eastern courtiers for flattery and adulation. "I did not stipulate for my privilege, as an Englishman, to be seated in the prince's presence, fearing that, if I did, I should not obtain an interview; so I was obliged to stand before him. I was presented by his mehmandar, whose motions of reverence I imitated. His highness's manner was haughty, but it seemed habitual and not assumed. He asked me several questions, mostly respecting himself. To these I always tried to give a reasonable answer; but the mehmandar, pretending to attribute my plainness of language to ignorance of idiom, turned everything I said into extravagant compliment to the prince, and then asked me if

that was not what I intended to say. To dissent was impossible; so I let him have his own way, and thus all parties were pleased."

Proceeding onwards in the road from Teheran to Tabriz, we arrive at the ruins of Sultameh. This was once a considerable and beautiful city; but nothing now remains of it but ruinous vestiges, of which the chief is the palace of the Sultan Khodabundah, by whom the city was built 600 years ago. A little farther northward is Zinjaim, a large and populous town, forming the capital of the district of Khumseh, and governed by one of the king's sons. This town is provided with bazaars equal to those of almost any town in the Persian empire; one of them extends from the eastern to the western gate, and is covered throughout the whole length; the shops and stalls being provided with all the usual articles of consumption. From this bazaar another branches out, and terminates at the other end in the maidan, or great square.

We now approach that mountainous region which separates the Caspian from the Black Sea. A few miles beyond Sultameh a brick bridge crosses the river Kizil Oozan, which separates the provinces of Irak Ajemi and Azerbijan. The scenery in the neighbourhood of this bridge is exceedingly wild and rugged; immediately below the bridge, the river passes by a narrow channel between lofty precipitous mountains, which rise almost perpendicularly in rude rugged masses. At a little distance below the bridge are the remains of an ancient fort, standing on a detached rock of an irregular form.

In this immediate neighbourhood is Mount Ararat, certainly the most celebrated mountain in the world, since it is that on which the Sacred Record informs us the Ark of Noah rested when the waters of the Deluge had partly subsided. In the present day, this mountain is remarkable as being a point where three of the most extensive empires in the world meet each other:—the Russian empire, which spreads to the frozen regions on the north;—the Persian empire, which extends almost to the frontiers of India;—and the Turkish empire, which brings us to the central states of Europe; all meet at Mount Ararat, the only point where this confluence occurs. Mount Ararat is described as being most difficult of access. A Pacha of Bayazid, some years ago, tried to make the ascent to the highest summit. He departed from Bayazid with a large party of horsemen, at the most favourable season; and ascended the mountain on the Bayazid side, as high as he could on horseback. He caused three stations to be marked out on the ascent, where he built huts and collected provisions. He had no difficulty in crossing the region of snow near the upper part of the mountain; but when he came to the great cap of ice that covers the top of the cone, he could proceed no farther, because several of his men were there seized with violent oppressions of the chest, from the great rarefaction of the air. He had before offered large rewards to any one who should reach the top; but though many Koords who live at its base have attempted it, all have been equally unsuccessful. Besides the great rarefaction of the air, his men had to contend with dangers arising from falling ice, large pieces of which were constantly detaching themselves from the main body and rolling down. An immense chasm extends nearly half way down the mountain, in the deep recesses of which are vast masses of ice.

We have gone somewhat out of the route, for the sake of mentioning a spot so celebrated as Mount Ararat. We must now transport ourselves somewhat eastward, where the town of Tabriz lies in our line of route. Tabriz is about three miles and a half in circumference, and is surrounded by walls built of sun-burnt brick, with towers of kiln-burnt brick, placed at irregular distances along the walls. There are seven gates, at each of which guards are stationed; and they are closed an hour or two after sunset, and not opened again till the morning. Tabriz was formerly the second city of Persia, in size and importance; but it is now greatly diminished in wealth and population. The Ark Ali Shah (citadel of Ali Shah) is a structure, which was originally intended for a palace; but the prince afterwards converted it into a citadel. It contains within its limits, the remains of a mosque about eighty feet high, at the top of which are three small chambers, from whence a panoramic view of the surrounding country is obtained. When Mr. Morier was at Tabriz, a number of European workmen were fitting up the Ark Ali Shah as an arsenal. In the front yard was a range of guns and all the accompaniments of artillery. A numerous body of carpenters and wheelwrights were at work with European tools, superintended by an European mechanic. Farther on was a blacksmith's forge, worked with charcoal for want of coal. Then in another yard were piles of shot, with men filling cartridges, &c. Next succeeded a range of apartments, in which were saddlers, and workers of leather; and storerooms for articles of various kinds.

To understand the motives for such an establishment, we must bear in mind that we are now near the frontiers of Russia, between which country and Persia frequent hostilities have taken place within the last twenty or thirty years; insomuch, that the effeminate habits and proceedings witnessed in Southern Persia would be utterly unable to compete with such a vigorous nation as Russia.

As we shall soon take leave of Persia, we will give Mr. Morier's description of one or two features characteristic of most Persian towns:—"There are *noises* peculiar to every city and country; and none are more distinct and characteristic than those of Persia. First, at the dawn of day, the *muezzins* are heard in a great variety of tones, calling the people to prayers from the tops of the mosques; these are mixed with the sounds of cow-horns, blown by the keepers of the *hummums*, to inform the women, who bathe before the men, that the baths are heated, and ready for their reception. The cow-horns set all the dogs in the city howling in a frightful manner. The asses of the town, generally beginning to bray about the same time, are answered by all the asses in the neighbourhood; a thousand cocks then intrude their shrill voices; which, with the other subsidiary noises of persons calling to each other, knocking at doors, cries of children, complete a din very unusual to the ears of an European. In the summer season, as the operations of domestic life are mostly performed in the open air, every noise is heard. At night, all sleep on the tops of their houses, their beds being spread upon their terraces, without any other covering over their heads than the vault of heaven. The poor seldom have a screen to keep them from the gaze of passengers; and as we generally rode out on horseback at a very early hour, we perceived, on the tops of the houses, people either still in bed, or just getting up; and certainly no sight was ever stranger. The women appeared to be always up the first, while the men were frequently seen lounging in bed long after the sun had risen." We may remark that there are many passages in Scripture which seem to indicate that the custom of sleeping on the housetop prevailed in the Jewish nation, and in other parts of Western Asia.

When Captain Keppel was at Tabriz, he once dined at the house of the Russian Chargé d'Affaires; and mentions it as a singular instance of the way in which natives of different countries find their way into foreign lands, that although all the party were Christians, and did not exceed twenty, there were present natives of France, Spain, Italy, Germany, Holland, Russia, England, Greece, Sclavonia, Armenia, Georgia, Arabia, and Persia; and among the servants in attendance were a Russian, a Persian, an Indian, a Turk, and a Kalmuk Tartar.

From Tabriz, different routes may be, and frequently are, taken to Europe; but that which we shall follow approaches pretty near to the Caspian Sea, and touches it at two points, Baku and Astrakhan.

The river Araxes forms the boundary between the Russian and Persian empires, at that part where Captain Keppel and his party crossed it. The river is here about a hundred yards in width; over which the party crossed in a boat made of the hollow trunk of a tree, the fibres of which formed a rope to secure it to the bank. In this frail bark the men and the baggage were transported over the river, while the horses were made to swim over. On crossing the river the party entered a tent, before which a number of women were busily engaged, some in manufacturing carpets, others in milking cattle, and others in making bread.

About half-way between Tabriz and Baku, is the town of Sheesha, containing about two thousand houses, of which three-fourths are inhabited by Tartars, and the remainder by Armenians. The present town was built about a century ago by a Tartar prince, but the remains of an older town are visible at the foot of an opposite hill. The lower parts of the houses are built of stone, and have shelving roofs of shingle. The town and fort are surrounded by a wall; but the natural advantages of the situation, on the top of an almost inaccessible rock, have left little occasion for artificial defence. The language spoken is a kind of Turkish dialect; but the inhabitants read and write in Persian; the costume also bears a nearer resemblance to the Persian.

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Baku is situated on a small promontory which juts out into the Caspian Sea. It is a neat, though small sea-port town, built entirely of stone; and surrounded by a deep ditch and double wall of stone. The roofs of the houses are flat, and covered with a thick coating of naphtha. The town contains one Armenian church, and twenty mosques, with only one Russian church. The bazaar is small, but neat, and is much more cleanly than the generality of Asiatic bazaars. The population is computed at about four thousand persons, of whom nearly all are Tartars. The principal articles of commerce are common silk and various small wares of Russian manufacture. On the site of this town once stood a city, celebrated in the time of the Persian fire-worshippers for its sacred temples, on the altars of which blazed perpetual flames of fire, produced by ignited naphtha. Thousands of pilgrims used to pay an annual visit to this place, before the rapid spread of Mohammedanism had reduced to insignificance the religion of ancient Persia. Captain Keppel found at this spot the remains of a temple of this kind, attended by tribes who presented a singular mixture of Tartar and Indian habits. Enclosed within a pentagonal wall, and standing nearly in the centre of a court, was a fire temple,—a small, square building, with three steps leading up to it from each face. Three bells of different sizes were suspended from the roof. At each corner was a hollow column, higher than the surrounding buildings, from the top of which issued a bright flame; and in the middle of the court was a large fire of ignited naphtha. The pentagon, which on the outside forms the wall, comprises in the interior nineteen small cells, each inhabited by a devotee. These devotees were Hindoos; but their language and manners had such a strong tinge of the Tartar race, that their Hindoo origin was almost concealed. A Brahmin was found engaged at his devotion in one of the cells; in another cell was an officiating priest of a particular sect of the Hindoos. These devotees were pilgrims who came from different parts of India, and who were accustomed to relieve each other every two or three years in watching the sacred fire, as they deem it. We may remark that every part of the soil in the neighbourhood is strongly impregnated with naphtha.

The next town of any note is Kuba, once the residence of a Tartar khan, but now garrisoned by the Russians. It contains about five thousand inhabitants, one third of whom are said to be Jews. Still farther to the north is the town of Durbund, the capital of one of the Russian provinces. The walls, which are very ancient, divide the town into three portions, of which the higher comprises the citadel, the middle constitutes the town; and the lowest is principally occupied by gardens. Here is shown the foundation of a house built by Peter the Great, who visited the town soon after it had come into the hands of Russia. The walls of the city are built of a compact stone of a dark colour; and sixty bastions protrude at regular intervals. One of the gates has an inscription in Russian; another has an inscription in Persian; one among many proofs of the mixed character of the place. Durbund has been successively in the hands of Turks, Tartars, Arabs, Persians, and Russians, and manifests the heterogeneous effects resulting from this circumstance. Here one of our English travellers paid a visit to the Russian commandant and his lady; and says:—"On my return to the room, the company, consisting of the officers of the regiment and the staff-officers of the garrison, were thronging in. I here saw, for the first time, the Russian salutation. Every officer, on entering, took the right hand of the hostess and pressed it to his lips; while she at the same moment kissed his cheek. Dinner was prefaced by a glass of brandy and a piece of salt fish. The ladies, of whom there were several, seated themselves together; the post of honour next our fair hostess was assigned to me as the stranger. The band played during dinner; after which the company (with the exception of myself, who took a siesta) sat down to cards."

Farther northward we come to Kizliar, standing on the banks of the river Terek, at about forty miles' distance from the Caspian. This town and the dependant villages contain about twenty thousand inhabitants; of whom the greater numbers are Tartars, and nearly all the remainder Armenians, (for we have now pretty well lost all traces of the Persian race.) This town is a kind of limit between two different districts, as respects the mode of travelling; for the routes just described have been performed almost wholly on horseback, whereas the journey northward from Kizliar to St. Petersburgh, by way of Astrakhan, is performed by carriage. These carriages—at least those employed between Kizliar and Astrakhan,—are four-wheeled open carriages, without springs, about five feet and a half long, three feet broad, and three deep; and drawn by three horses abreast, generally in as rude and inelegant a condition as the carriage itself.

The district from Kizliar to Astrakhan is, for the most part, dreary and sterile; over which the Tartar drivers conduct their vehicle in a fearless and vigilant manner. Arrived at Astrakhan, the English party whom we have hitherto accompanied, and whom we shall now leave, were ushered to the residence of a Scotch missionary, the Rev. Mr. Glen, whose pious and benevolent demeanour made a deep impression on Captain Keppel, who remarks:—"At no period of my life do I remember to have been impressed with so strong a feeling of devotion as on this evening. Few persons of the same general habits will understand my particular feelings. Few have ever been placed in the same situation under similar circumstances. Quitting countries once the most rich and populous, now the most desolate and lone, fulfilling in their calamities the decrees of Divine Providence; safe from the dangers of the desert, and from the barbarian tribes with whom every crime was common, I found myself in a religious sanctuary among my own countrymen, in whose countenances, whatever were the trivial errors of their belief, might be traced the purity of their lives, and that enthusiasm in the cause of religion which has caused them to become voluntary exiles: whose kindness promised me every comfort, and whose voices were gratefully raised to Heaven in my behalf."

The city of Astrakhan is the most celebrated in the southern part of the Russian empire, being so situated as to command the commerce of the Caspian Sea. It is situated near the mouth of the great river Volga, at a distance of about eight hundred miles south-east of Moscow; and from it there is an uninterrupted water conveyance to St. Petersburgh, twelve hundred miles distant. It ranks as the eighth city in the Russian empire, having a population of forty thousand persons. The town is irregularly built, and the houses present a singular medley of European and Asiatic taste; they are constructed principally of wood, and are between four and five thousand in number. There are four Armenian churches, twenty-five Greek churches (the national church of Russia), nineteen Mohammedan mosques, besides places of worship for various sects, both European and Asiatic. There is an academy for marine cadets; a Greek seminary for ecclesiastics; a high school; a district grammar school; and four inferior schools. The Kremlin, or citadel, is a large and beautiful building, containing the cathedral and the barracks; the former of which, like most ecclesiastical edifices in Russia, consists of a massive parallelogram with four small cupolas on the roof, and a large one in the centre, from which the building receives its light: the interior is splendidly decorated; and is prized among the Russians for containing a costly effigy of the Virgin,—six mitres inlaid with pearls and precious stones of large size,—a baptismal font of massive silver, ninety-eight pounds in weight,—and other costly articles. One of the most remarkable buildings is a mosque recently erected by a private wealthy Mohammedan, but shaped like the Christian churches of the East.

No city of Asia presents more striking features of Europe and Asia combined, than Astrakhan. The Russians form a considerable amount of the population, and are engaged in trade. The Tartars, belonging to three different classes or races, amount to about 10,000, and take up their abode in distinct suburbs of the city. The Armenians are among the most wealthy of the population, and have now nearly abandoned their peculiar national mode of dress, and have adopted the costume of Europe. The women, however, still walk abroad, covered from head to foot with an enormous white veil, which conceals the whole person, except a small part of the face. The Georgians of Astrakhan are mostly mechanics, or persons filling humble stations in life. The Hindoos and Chinese to be found at Astrakhan are only occasional visitors, with the exception of three or four hundred of the former, whose occupation is to lend out money at usurious interest; and as their accumulations are seconded by the utmost simplicity and parsimony in their mode of living, these Hindoos rise quickly into affluence. Although the regular population of Astrakhan is estimated at 40,000, yet it is supposed that at one particular season of the year, *i.e.*, the fishing season, there are no less than 30,000 additional visitors at Astrakhan, drawn thither principally on commercial pursuits. At this season the city presents a highly interesting scene of gaiety and bustle.

Having thus brought our fellow-travellers to Astrakhan, we may make a few remarks on the extraordinary district which separates it from the central parts of Persia. If we draw a straight line from Astrakhan to the south-west corner of the Caspian Sea, another straight line from this last point to the easternmost point of the Black Sea, and a third from the Black Sea to Astrakhan, we shall enclose a triangular district, whose longest side (along the Caspian) is about 700 miles, and the other two about 500 each. This district is, in a political sense, one of the most remarkable in Asia. It contains the boundary-lines between the extensive empires of Russia, Turkey, and Persia, and contains a population who care but little for the supreme authority of either of those countries. Georgians, Mingrelians, Circassians, Armenians, Tartars, Koords,—all are to be met with in this district, forming a kind of boundary between the more effeminate Persians on the south, and the rude Cossacks and Tartars on the north. Their religion varies as much as their origin and habits; Mohammedans, Armenian Christians, Russian Christians, Fire Worshippers, Worshippers of the Great Lama of Thibet,—all are to be found here.

These circumstances give a strangely mixed character to the towns situated in this district. Gradually they are losing their Persian or Turkish character, and are becoming every year more and more Russian, occasioned by the steady progress of this power in that direction. Still, however, the old institutions and habits are not done away with. A mosque may be found next to a Russian guard-house, or a flat-roofed Persian house may be near a Russian church; while both Russians and Persians are required to be constantly on the alert, to repel the bold mountaineers who repeatedly attack them, and who, deeming themselves the rightful owners of the country, look upon both the others as enemies. The persevering energy of the Russian government has, however, overcome so many difficulties and obstacles in this quarter, that the boundary between Russia and Persia does not differ widely from the line which we have supposed to be drawn from the east end of the Black Sea to the south-west extremity of the Caspian. Whether or not this boundary will be driven still farther southward, is a question which the future history of Central Asia can alone determine.

From Astrakhan to St Petersburgh is, as we have said, a distance of about twelve hundred miles. There are two reasons why it will not be necessary for us to follow our travellers along this road: 1st. We have made a point, in our details hitherto, to avoid entering on subjects which have already been described in the *Saturday Magazine:* and in pursuance of this plan, we will refrain from entering at any length into Russian topography, since a considerable number of articles were devoted to that subject in our early volumes. 2nd. There is no country in Europe or Asia, presenting fewer points of interest than the flat country from Astrakhan to St. Petersburgh. No great city, except Moscow, is met with in this immense distance; and the inhabitants are so extremely scanty that nothing can be more dreary than many parts of this route. Nearly all English travellers who take this route try to get through it as rapidly as possible, knowing that there is little to interest them on the way. Colonel Conolly, a few years ago, in making the overland journey, hired a carriage for the Russian route, which he fitted up for day or night travelling; stored it with provisions; provided himself with furs and warm clothing, and lived, boarded, and slept in his carriage during the greater portion of a very rapid journey from St. Petersburgh to the Persian frontier. Inns are so few on the road, and provisions so bad, that some such plan as this is necessary to keep the demon of hunger away. Capt. Keppel, during a good portion of his journey, adopted a plan which he had many occasions to be thankful for: he fastened a *tea-kettle* to the saddle of his horse; and whenever he could not obtain warm beverage any other way, he would put a little tea and sugar into his kettle, obtain some milk if possible, add a requisite quantity of water, and manage to boil a cup of tea in a very few minutes: quite willing to dispense with the numerous conveniences of a tea-service. Overland travellers must, indeed, reckon on being deprived of many of the comforts found on ship-board; but the excitement attending scenes of travel frequently more than compensates for this deprivation.

We thus end our first overland route; which may be thus summed up. From Bombay across the Indian Ocean, to the Persian Gulf is about thirteen hundred miles:—from the south to the north of the Persian Gulf, six or seven hundred;—from the Persian Gulf to Mount Ararat, seven hundred;—from thence to Astrakhan, probably five hundred;—from Astrakhan to Moscow, eight hundred;—and from thence to St. Petersburgh, four hundred:—making about four thousand five hundred miles. These distances are estimated very roughly; and do not take in the turnings and windings of the roads necessarily taken; but they may serve to convey something like an idea of the real distance gone over.

EASTERN DORMITORY ON THE HOUSE-TOP.

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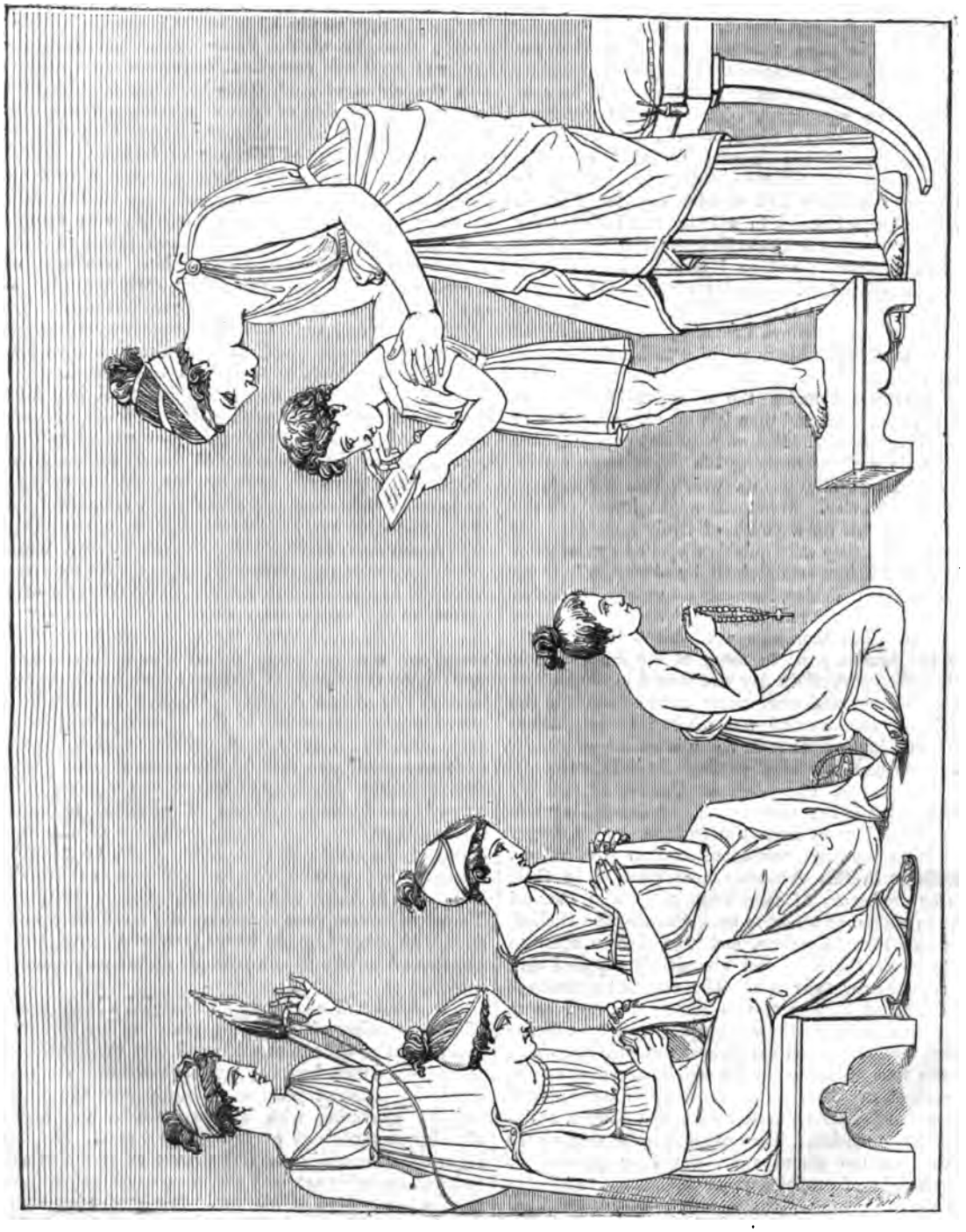

INSTRUCTION. FROM A BASSO RELIEVO BY CANOVA.

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CANOVA AND HIS WORKS.

II.

WE left our young artist at that period of his history when his eager aspirings after distinction in his profession were encouraged by the invitation of his benevolent patron, the senator Falier, to repair immediately to Venice. The reception he met with at the Falier palace was most kind and hospitable, and he thus found himself, at the age of fifteen, in a situation which opened a new and ample field for observation and improvement. The love of independence, which had ever strongly marked the character of Canova, would not, however, permit him to be entirely dependent on the bounty of others. He justly considered himself sufficiently advanced in the mechanical department of his profession to entitle him to some recompense in labouring for another; he therefore resolved to engage himself as assistant to some eminent master, and was not long in entering into an agreement with *Giuseppe Ferrari*, the nephew, or grand-nephew, of his former friend Toretto, and sometimes known by that surname. Canova engaged, for a very slender consideration, to work during the latter half of each day for Ferrari. "I laboured," says Canova, in a letter to a friend, "for a mere pittance,—but it was sufficient. It was the fruit of my own resolution; and, as I then flattered myself, the foretaste of more honourable rewards, for I never thought of wealth." It is evident, therefore, that, young and inexperienced as Canova then was, his own exertions did in part minister to his necessities on his first arrival at Venice.

Canova remained under the direction of Giuseppe Ferrari nearly a year, and then left his employment, and became his own master. But we must not pass over his space of time without noticing his deportment amidst the novelties and allurements which presented themselves in a great city. Whatever might have been the fears of his friends for a youth of lively sensibility and little experience, they were quickly dispelled by the strict propriety of conduct maintained by Antonio. From his first arrival in Venice, he made an exact distribution of his time, and allotted to each division its proper employment. The mornings were devoted to the studies of the Academy, or to those of the *Farsetti* gallery; the latter part of the day was passed in the labours of the workshop; and after these were concluded, the remainder of the evening was allotted to intellectual pursuits, and improvement in those branches of education in which he felt himself particularly deficient.

The Academy of Fine Arts at Venice, though far inferior to what it has since become, possessed at this time some good casts from the antique, and a larger number from the most celebrated modern productions. The students in this Academy were directed in their studies by professors of some eminence. The Farsetti gallery, in which, as we have said, Canova also studied, was in the Farsetti palace, and was thrown open to students in the fine arts, and abundantly supplied with every requisite for their use. The constant attendance and assiduity of Canova at this place were such as to attract the attention of the noble owner, and from thence the young artist received his earliest commission, which led to the first performance for which money was paid. This earliest of Canova's public labours consisted of two baskets filled with different fruits and flowers, sculptured in white marble. They are still to be seen on the balustrade of the grand stair, but they present no striking marks of proficiency, or indications of future talent.

An undertaking of greater importance had for some time occupied his leisure hours. This was commenced at the instigation of Falier, and was to comprise a group on the subject of Orpheus and Eurydice. The model for the statue of Eurydice was first executed, and as the Falier family were about to leave town, for their usual summer retreat at Asola, Canova accompanied them, carrying with him everything necessary for the completion of that part of his work. At the Villa Falier, therefore, was Canova's first statue completed, when he was in his sixteenth year. It was executed in *pietra di Cova*, a species of soft stone, found near Vicenza. Canova is said to have been but little satisfied with this first effort; but his Eurydice was generally applauded as a work of great merit, and gave so much satisfaction to his patron that the young sculptor was declared sufficiently instructed in his profession to present himself, without fear, on the public stage of life. We may here relate a pleasing anecdote, illustrative of the kindness of Canova's disposition. During the time he was labouring at the statue of Eurydice, a domestic of the Falier family had waited on him, and rendered occasional assistance, in connexion with the object of study, thus becoming for the time a friend and companion of the young artist. Nearly forty years afterwards, when Canova, loaded with honours, and bearing the title of Marquis of Ischia, visited the Villa Falier, he recognized the same domestic, now aged and infirm, as he entered the apartment, in attendance upon the company. Canova immediately rose from his seat, and going up to the old man, in presence of the assembly, most cordially embraced him, recalling with delight every little incident of their early acquaintance, and suggesting many endearing recollections. True nobility of mind, united with the gentle virtues was remarkably displayed in Canova, and made him as much beloved as his talents caused him to be admired.

But we must return to the completion of his Eurydice, and the commencement of his professional career on his own account. Canova's first workshop was a vacant cell in the monastery of the Augustine Friars, attached to the church of St. Stefano, which through the kindness of the monks was gratuitously assigned for his use. There, in an indifferently lighted apartment, on the ground-floor of the inner cloister, Canova worked industriously for the space of four years. An apartment was still appropriated to his use in the dwelling of his patron, so that he did not remain in his cell after the hours of labour. During the first three years of this period he was employed, in addition to his ordinary studies, on the statue of Orpheus, and in executing a bust of the *Doge Renier*. He was regular in his attendance on the studies of the Academy, but his progress appears to have been chiefly promoted by his assiduous study and faithful imitation of nature. At this period the simplicity of nature was generally considered as poverty,—devoid of elegance or grace: instead, therefore, of a faithful imitation of the object of study, the artists of that period drew, or modelled, the figure before them, with such additions or corrections of nature as their own capricious fancies suggested. These departures from simplicity and truth were turned from with disgust by the better taste of Canova, and he determined to take nature—simple nature only—for his model.

The science of anatomy now occupied a large portion of the attention of our young sculptor, and though he was at first obliged to rest satisfied with the information to be derived from books and public lectures, it was afterwards his constant practice to study from the human subject, dissecting with his own hands, and making sketches or models of every important part. He justly regarded a knowledge of this science as of the greatest importance to his art, and therefore continued to study it to a late period of his life. His profession so constantly engaged his thoughts that even when walking in the streets, where that exercise could be enjoyed in Venice, he was always ready to mark whatever he saw that was interesting in expression, or striking in attitude. "He would often stop before the workshop of some

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artisan, to remark the forceful yet easy position into which the body was thrown in different occupations." His steps were frequently arrested, as he traversed the long succession of wharfs which formed a favourite place of exercise to him, to observe with admiration the well-formed trunk or sinewy limbs of a porter in powerful exertion. Yet so much did he love simplicity, that, on being observed by those who had been the objects of his contemplation, he immediately passed on, knowing that his attentive regard would produce constraint in their actions. Appearances, thus hastily caught, were so cleverly retained, and fixed by the sculptor in his mind, that when his subject required it he could make use of them in a way seldom perceived in the artificial and studied positions of academical figures. His application was at this period unremitting; and none could witness such unwearied exertions, united with so much talent, without anticipating for our artist a high degree of future excellence and eminence. Nor did he, while closely engaged in studies immediately connected with his profession, pass by in disregard those collateral branches of knowledge which might give correctness to the subordinate embellishments of sculpture. To use the words of his friend, the younger Falier,—"He knew how to instruct himself in every kind of information connected with literature and the arts, at the very moment when his heart and hand were occupied with such exquisite address in giving to marble life and movement." He studied ancient and modern history, especially the former. Through the medium of translations, he became acquainted with most of the classic writers of Greece and Italy; he was well read in works of antiquity, taste, and the philosophy of the arts, and is said to have been well acquainted with the Spanish and French languages. Respecting the former there appears some doubt, but the latter he studied with assiduity, and spoke with fluency and elegance.

This general plan of professional study was followed by Canova during nearly seven years, three of which had now elapsed since the production of his statue of Eurydice. As might have been expected, the progress in knowledge and experience of the artist, was strongly marked in the completion of the group. His Orpheus which now appeared, was evidently superior to its companion, and exhibited wonderful correctness, with the utmost simplicity and closest imitation of nature. It was wrought in soft stone, but the execution was such that it might easily have been taken for marble tinted by age. There was a custom at Venice for such artists as had recently finished any meritorious performance, to exhibit it publicly in the square of St. Marks, at the annual festival of the Ascension. Induced and encouraged by his friends, Canova so far overcame his natural diffidence as to present here his statue of Orpheus. As this was his first attempt to bring himself into public notice, his feelings were proportionably agitated; but his apprehensions as to the result of this step, were soon dissipated. Though the style of his production was altogether different from that which was generally followed at that period, yet the simplicity and truth conspicuous in it, called forth the approbation of every person of genuine taste and feeling, while the obscurity of the author shielded him from the envy of rivals.

From this period, 1776, must be dated the commencement of Canova's success and reputation. The approbation bestowed on the Orpheus, by the Venetian public, was ever gratefully remembered by Canova, as that which made him a sculptor. After an interval of many years, on reading a letter which had been written at this period and in which his success was recorded, he appeared greatly affected, and exclaimed, "*O cari amici! O grati tempi! quindi sono divenuto scultore.*" (O dear friends! O delightful times! by these have I been rendered a sculptor.) Nearly half a century after this period, and when his fame stood so high that we might almost expect him to forget the circumstances relating to his first group, he shewed his gratitude to his early patron by adopting, when Marquis of Ischia, the armorial bearings of the *serpent* and *lyre*, the mythological symbols of Orpheus and Eurydice. "In my armorial bearings," he writes to the younger Falier, "I have adopted the emblems of Orpheus and Eurydice in memory of these my first two statues, ordered of me by your most estimable father, from which statues I ought to acknowledge the commencement of my own civil existence."

After the exhibition of the Orpheus, Canova found his professional employment rapidly increase. The senator, Grimani, ordered a copy of that statue, in smaller dimensions, which was completed about a year after the former, in Carrara marble. The accommodation afforded to our artist by the kind monks of St. Stefano was now found insufficient, and he therefore removed to a better-lighted studio in the street or lane *San Maurizio*, where he continued till his departure from Venice. The following year he produced his statue of *Esculapius* in proportions larger than life. This work was commissioned by the *Marchioness Spinola;* but from a change of circumstances, the lady was obliged to relinquish the contract; thereby causing serious inconvenience to the artist, who was long in finding another purchaser. Canova on seeing this statue in after years is said to have been greatly surprised at the taste and mechanical skill displayed in it, and to have regretted that, during half a century, his progress had not more nearly corresponded with these early indications of excellence.

The most important and celebrated production that had yet appeared, was completed in Canova's twenty-second year. This was the group of Dædalus and Icarus, executed in Carrara marble, at the request of the senator, *Pisani*, who designed it for a niche between the double entrance doors of the palace fronting the grand canal. Such was the beauty of the production, however, that it was deemed too valuable to be thus exposed, and was placed, with some *chefs d'œuvres* of the sister art, in an inner gallery of the palace. This group was the last work of importance executed by Canova, at Venice. Highly as his merits were now estimated in that city, he felt that it did not present a field for the exercise of his abilities, nor afford the means of more extensive and refined acquirements. He therefore resolved to repair to Rome and to attempt an establishment there. To aid this enterprise, his friends petitioned the Venetian state for a pension, that he might be thus enabled to prosecute his studies without embarrassment. Canova did not wait the result of their endeavours in his behalf, but leaving this affair in their hands, set out for the banks of the Tiber.

Among the numerous productions of our artist, the specimens of his skill in basso-relievo must not be overlooked. Our frontispiece represents one of these, being a pleasing group illustrative of the benevolent offices of Instruction.

The bassi-relievi of Canova frequently represent the figures of the natural size, and though exhibiting great beauty of form, delicacy of finish, and precision of outline, are said to be often deficient in strength, from the degree of relief being disproportionate to their dimensions. They have been compared to a fine picture, where the light is too equally diffused over the whole surface without the just equivalent of shade. "In lines of such extent," says Memes, "it would have been well if the contours, instead of losing themselves in the plain of the tablet, had been rounded off to a certain altitude; then cut square, as in many of the most admired relievos of antiquity: a bolder, firmer, and deeper shadow is thus cast, and a more vigorous effect produced."

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CALCULATING MACHINES.

III. BABBAGE'S CALCULATING ENGINE.

IN the present paper we shall finish our notice of calculating machines, by referring to Mr. Babbage's engine, and in doing so we shall consider, first, the necessity for such a machine,—secondly, the mathematical principle on which it is constructed,—and, thirdly, the sort of mechanism by which it performs its office.

1. Persons whose avocations require the constant aid of arithmetical or other tables are liable to be led into frequent and increasing error, unless those tables be rigorously correct. In the navigation of a ship, or in the preparation of an almanac, for instance, tables are employed to an extent inconceivable by those to whom such employments are foreign; and in the higher branches of astronomy the extent of the use of tables is still greater. Now these tables, being the work of human heads and hands, are liable to all the defects incident to such productions; and it is accordingly found that every table which has been yet published has been disfigured by error of more or less magnitude. Tables of multiplication, of powers and roots, of trigonometrical elements, of logarithms, of the solar, lunar, and planetary motions, &c., have been computed and published in various countries, to the extent of many hundred volumes; and, notwithstanding the extraordinary care which has often been bestowed on their preparation, there is scarcely one of them free from error, more or less. In a multiplication table, (as far as 100 times 1000,) constructed by Dr. Hutton for the Board of Longitude, forty errors were discovered on one single page, taken at random. In the solar and lunar tables from whence the computations were formerly made for the Nautical Almanac, more than five hundred errors were found by one person. In the "Tables requisite to be used with the Nautical Almanac" more than one thousand errors were detected by a single individual. In certain tables, published by the Board of Longitude, a table of errata, containing eleven hundred errors, was affixed! It was afterwards found necessary to have an errata of the errata!! and one instance has been known of an erratum of the errata of the errata!!!

Now such a mass of error seriously affects the computations into which these tables enter, and it is of course desirable to devise the means of diminishing the amount of such error. But the sources of error are so numerous that it is difficult to counteract or remedy them all; for instance, some result from falsely computing, and others from falsely transcribing; some from the compositor taking wrong types, and others from a displacement of the types, by the inking-ball used by the printers, and then by a faulty replacement of such types by the pressman. Mr. Babbage himself published a set of logarithmic tables, in which, notwithstanding a degree of care which had perhaps never before been bestowed on such a subject, errors were detected, even after the tables were stereotyped.

2. These circumstances, amounting almost to an impossibility of producing correct tables by the common method, led Mr. Babbage, about twenty years ago, to devise a mode of computing and printing off mathematical tables by a machine; for it was found that, however correct the computation might have been, errors of the press would always exist under the common method. Nearly all tables, such as logarithms, squares, cubes, square roots, cube roots, sines, tangents, &c., consist of numbers which either increase or decrease, according to some general law, and it is therefore for the most part found that, whatever be the nature of the table, it can be computed by a continued series of *additions*, so as to come within the scope of mechanical action. The formation of tables by a constant succession of additions depends on a mathematical property, called the *method of differences*, which we must endeavour briefly to explain.

Let us take a series of square numbers, that is, the squares of the natural numbers, beginning from 1.

Nos.	Squares.	1st. Diff.	2nd. Diff.
1	1		
		3	
2	4		2
		5	
3	9		2
		7	
4	16		2
		9	
5	25		2
		11	
6	36		

There results the series of squares 1, 4, 9, 16, 25, 36. Subtract each number from the one next below it, that is, 1 from 4, 4 from 9, &c., and there results the series 3, 5, 7, 9, 11, called *1st differences*. Again, subtract each one of these last obtained numbers from the one next below it, and we shall obtain the constant number 2, called *2nd differences*. Now it is found that in almost every table, consisting of numbers increasing or decreasing according to some general law, we can arrive at a *constant* difference, by continual subtraction. Here is another example, which is a short table of the cubes, or *3rd* powers of numbers:—

Nos.	Cubes.	D^1	D^2	D^3
1	1			
		7		
2	8		12	
		19		6
3	27		18	
		37		6
4	64		24	
		61		6
5	125		30	
		91		6
6	216		36	
		127		6
7	343		42	
		169		6
8	512		48	
		217		
9	729			

By subtracting the cubes successively one from another, we get a series of numbers forming the 1st order of differences. By subtracting similarly the terms of this series, we obtain another series, forming the 2nd order of differences, and, by proceeding in like manner a third time, we come at length to a 3rd order of differences, in which the terms are all equal, and which is the constant difference. Something more or less analogous to this will occur in almost all tables increasing or decreasing according to a certain law, and we can now show how these differences enable us to arrive at the successive terms of a table, by mere addition. For instance, having ascertained in the preceding table that the constant difference is 6, that there are three orders of differences, and that their first terms are 6, 12, and 7 respectively, we can construct the 2nd differences by adding 6 to 12, and then 6 to this sum, time after time. Then the 1st differences may be obtained by adding the terms in the 2nd differences to 7, term by term, and so on until we at length arrive at the required numbers, nothing being necessary throughout but a continual process of addition. In some tables it is found that we arrive at a column of differences which remains constant for a certain number of terms, and then acquires a slight increase or decrease; but even in such a case, a periodical change of the constant difference will be all that is necessary.

Mr. Babbage, after carefully considering the various properties of numbers, selected this one, viz., the method of differences, as the basis of his machine; since, after having given the few early terms of a series, and the first term of each of the several orders of differences, the subsequent construction of the table depends wholly on a continued succession of additions, a process which is more readily within the power of machinery than any other. In fact, as exemplifying the necessity for such a machine, in order to insure accuracy in the unceasing and monotonous operations of addition, we will relate a curious but well-known fact.

During the time of the French republic, it was decided

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upon by the government of that country, to construct a vast system of logarithmic and trigonometric tables, such as did not then exist, and which might serve as a store of calculation for ever. M. Prony, who was appointed to preside over this undertaking, adopted with success the useful principle of the division of labour. He distributed the persons engaged in this undertaking into three sections: the first consisted of half-a-dozen of the most eminent analysts, whose duty it was to investigate the most convenient mathematical formulæ, which should enable the computers to proceed with the greatest expedition and accuracy by the method of differences. These formulæ, when decided upon by the first section, were handed over to the second, which consisted of about ten properly qualified mathematicians. It was the duty of this second section to convert into numbers certain general or algebraical expressions which occurred in the formulæ, so as to prepare them for the computers. They were then given to the third section, who formed a body of nearly a hundred computers, whose office it was to make up the numbers, finally intended for the tables, and those, who in this case committed fewest errors, were those who understood nothing but mere addition! This shows that, as such persons were little better than machines, so a regular machine would achieve its work one degree better, that is, by ensuring perfect accuracy.

The body of tables thus calculated, contained in manuscript seventeen folio volumes, but were never published. The printing of them was commenced, and a small portion was actually stereotyped: but soon after the commencement of this undertaking, the sudden fall of the assignats, rendered it impossible for the printer to fulfil his contract with the government. The British government offered 5000*l.* towards the completion of this work, but political circumstances perhaps prevented its re-adoption, and it has never been resumed.

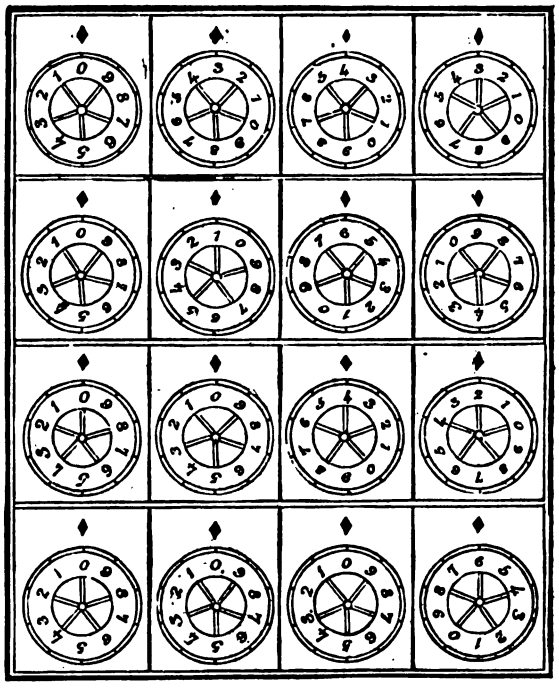
3. The fact, therefore, stands clear, that persons who knew only addition, worked throughout *nearly* correct; and that a machine, which acts only by performing addition, is throughout *quite* correct. We therefore now proceed to take a cursory glance of the mechanism of Mr. Babbage's machine.

He provided as many dial-faces as there were orders of differences, plus the origial series, in the particular table which he desired to construct, multiplied by the number of figures, to which each term would extend: for instance, if, as we have supposed in the annexed figure, each term should extend to four places of figures, and if the series of terms had three orders of differences besides the original series itself, there would be sixteen dial-faces arranged in a square. Each dial is marked with the ten digits arranged round in a circle, and above each disc is a mark which serves as an index. Each dial is also fixed on the face of a wheel, whose circumference is either toothed, or provided with projecting pins which can be inserted into an adjoining wheel. The object to be attained then is to make the dials above any particular order of differences revolve, in proportion to the number contained in the order of differences next below it.

For the sake of illustration, we shall therefore suppose that the table to be calculated shall consist of numbers not exceeding two or three places of figures, and that the difference of the third order is the constant difference, as in the last preceding table. When the dials revolve, the numbers pass, as they increase, under the index over each dial, that is, from left to right.

Now we will suppose that the line D¹ is to be added to the line T. To effect this, the dials on the line D¹ remain still, while those on the line T are so moved, that as many divisions on each dial shall pass under its index, as there are units in the number at the index just below it. If 0 be at any index on D¹, the dial above it does not move. In like manner, the D² is added to the line D¹. When two figures added together make more than 9, a carrying of 1 has to be made; and the dial to the left is accordingly advanced one division: Hence, in order to prevent the machine from being burthened with more mechanism than is necessary, the additions are performed in two successive periods of time, and the carryings in two other periods of time, thus:—If one complete revolution of the axis, which moves the machinery, makes one complete set of additions and carryings, the *first* quarter of a turn of the axis will add the *second* and fourth rows to the first and third, without carrying, which will be effected by the *second* quarter of a turn. The *third* quarter of a turn will add the second and third rows together, and the *fourth* will carry if necessary.

In the miniature representation which accompanies this slight description, we will suppose a computation to have proceeded as far as the cube of 7 which is 343. This number appears therefore in the highest row, and the several differences, as far as the third, which is constant, are shown in the successive rows of dials beneath. In the last preceding table, which concurs with these dials, the differences alluded to, are marked; and by comparing the table with the dials it will be seen how the process goes on, and that, at the completion of one revolution of the axis of the machine, the row T will give 0512, D¹ 0217, D² 0048, D³ 0007.



The machine occupies a space about ten feet broad, ten feet high, and five feet deep. In the foregoing description we have, for the sake of clearness, somewhat varied from the actual mechanism. There are, in fact, seven vertical axes in front of the machine, each containing eighteen wheels, with their *edges* presented to the eye; and round the edge of every wheel the numbers from 0 to 9 are written. The eighteen wheels are for the purpose of carrying a computation as far as eighteen places of figures; and the seven wheels in width are for constructing tables which have as many as six orders of differences. Seven other axes are placed behind the front ones, and are mounted with wheels connected with the moving parts of the machinery. The dials are placed vertically one below the other, and read from top to bottom: their axes are vertical, and their planes horizontal. This arrangement saves space, and lessens the amount of friction. The wheels of the last column, which gives the constant difference, always remain still, and are of course adjusted by the hand, when the calculation of a new table is about to commence. When

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anything goes wrong, or any new adjustment has to be made, the machinery rings a bell!

The reader would perhaps desire to learn, and we should be happy to describe, were it possible, the actual movements by which all these axes and wheels effect the process of computation; but, when we state that the drawings of the various parts, constructed by, or under, Mr. Babbage, cover one thousand square feet of surface, and that the machine is one of the most complicated assemblage of parts that the hand of man has ever devised, it is obvious that we must not attempt such a task. Suffice it to say, that every kind of mechanical agent is brought more or less into effect: cog-wheels, ratchet-wheels, bolts, teeth, claws, racks, levers, wedges, screws,—all are employed; and in such vast number, that none but persons accustomed to inspect machinery can avoid being bewildered by their enumeration.

Perhaps the most extraordinary part of the machine is, that it prints the tables as fast as it calculates them. When one of the dial-wheels is in such a position as to indicate any particular figure of the table, some mechanism at the back raises a curved arm, containing several figure-punches. A plate of copper is brought near the bent arm, and, by a sudden blow, an impression of the required figure is punched in the copper; and the figure so punched always corresponds with that indicated on the dial. The plate is shifted from place to place, until it is punched all over with figures arranged in a tabular form. The plate thus stamped may be either used as an engraved copper-plate, and printed from in that form; or may be used as a mould, from whence stereotyped plates may be produced.

When Mr. Babbage had advanced some way in the construction of a model-machine, and had ascertained that the principle on which he was proceeding was capable of effecting the desired object, the subject was taken up by government, and made a national concern, on the ground that no private individual could reap from such an invention a return adequate to the necessary outlay; and on the ground, also, that government were desirous of affording to the navy all possible means of obtaining correct tables for the computation of latitude, longitude, &c. The government applied to the Royal Society to report on the degree of progress which Mr. Babbage had made, and on the probability of the machine, when completed, effecting all that had been anticipated from it. The report was very favourable, conveying the opinion of the scientific men composing the committee of inquiry, that the proposed end was desirable; that it was attainable on the plan adopted by Mr. Babbage; and that that gentleman was fully equal to the task of carrying it out.

We have spoken of the machine as if it were completed, or, at least, as it is intended to be completed. But, in fact, it is not yet in operation, nor even near completion. More than twenty years have elapsed since the first commencement of the model, during the whole of which time new difficulties have occurred, and have been conquered one by one. Still, however, the machine is not completed, and we are not exactly aware what are the causes of the long delay;—whether it results wholly from the unprecedented difficulties of the undertaking, or whether pecuniary difficulties have retarded the progress; but every lover of astronomy, of navigation, or of general science, must ardently desire the completion of so noble a specimen of genius and perseverance. We believe that the machine, so far as it is yet constructed, is national property; and that Mr. Babbage has neither received, nor desires to receive, any pecuniary benefit from the invention. If this be really the case, it is difficult to conceive a more honourable position than that which the inventor must occupy in the estimation of all to whom the well-being of society, and its advancement in knowledge, is a desirable object.

BROCADE.

Some o'er her lap their careful plumes display'd,
Trembling, and conscious of the rich brocade.

In the early part of the last century a favourite but costly stuff for dresses was formed of gold, silver and silken threads, enriched with flowered ornaments of the same materials: this was called *brocade*. At the present day, however, all stuffs, grograms, satins, taffetas, and lustrings are called brocades, if they are adorned with flowers or other figures.

In the preparation of gold brocade many ingenious devices have been resorted to for diminishing the costliness of the article, by employing as small a quantity as possible of the precious metals. In the preparation of the threads for the brocade, a flattened silver-gilt wire or riband was spun on silk which had been previously dyed as near as possible of a gold colour; and the chief merit in preparing gold threads was so to regulate the convolutions of the metallic covering of the silk, that its edges should be in close contact and form a continuous casing without any overlapping or interstices.

In all manufactures a great demand for an article is a sufficient stimulus to ingenious persons to contrive the very best possible methods for its production; and accordingly, we find that at the time when gold brocade was much in request, the manufacture of the thread, upon which branch much of the brocade depended, was in a state of great excellence, and some manufacturers were so jealous of their skill as to keep their processes strictly secret. Among others, there existed at Milan a large manufactory, where by a secret process, flattened wire, gilt on one side only, was made. Nuremburg, the great toy-shop of Europe, furnished an inferior description of thread, made by spinning gilt copper wire on flaxen or hempen threads. The economical Chinese employed slips of gilt-paper twisted upon silk:—sometimes they even twisted the paper without any internal support, into long spiral rolls and introduced it into their dresses. But as these golden tissues were by no means permanent when worn about the person, the Chinese confined their use chiefly to the tapestries and internal decorations of their houses.

About the thirteenth century a very flourishing manufacture of brocades existed at Lucca; but in the year 1310 the artisans being oppressed by the government, fled to Venice, where they were encouraged to resume their trade, and for a long period they continued to carry it on with considerable success.

The Venetians invented a new form of brocade which they named *damasquitte*. Although it contained no more than half the quantity of gold and silver usually employed in making brocade, yet its appearance was far more costly and beautiful. The flattened wires were not placed so closely together on the silk threads, and the number of these threads in weaving was diminished. But the great secret of the economy seems to consist in passing the manufactured stuffs in a peculiar manner between rollers with great pressure, so as to partially crush the wire threads; by this means the ornamental pattern appeared like one entire brilliant surface of gold or silver.

This process was long kept a secret; but about the middle of the last century the spirit of commercial rivalry prompted the French Government to attempt a similar manufacture. In this attempt they were assisted by M. Vaucanson, so celelebrated for his automatic achievements, who erected machinery at Lyons, and presented an account of his proceedings to the French Academy in the year 1757.

The rollers employed by M. Vaucanson were, the upper one of wood, and the lower one of copper, the latter being made hollow, for the insertion of iron heaters. In the early attempts it was found that the united force

of ten men was scarcely sufficient so to work the rollers as to extend the plating of the wire threads; and the great amount of force so deranged the machinery in which the rollers were placed, that the effects of pressure on the cloth were always varying. Among many other inconveniences, the wooden rollers were constantly splitting or warping, in consequence of the mode of forcing the rollers together. M. Vaucanson, therefore, contrived a method whereby the pressure should always adjust itself to any inequalities in the stuff, or in the bearings of the machine. The axis of the copper roller he made to turn between anti-friction rollers, while the wooden roller was forced upwards by levers at the ends. Each lever had its short arm supported on the frame of the machine, and the long arm was drawn up by an iron rod communicating with the short arm of a horizontal lever, to which at its long arm was hung a weight; and these levers were so proportioned that thirty pounds only would produce a pressure between the rollers equal to 17,000 or 18,000 pounds. This force was found sufficient, and it was so effectual that the efforts of four men in turning the rollers answered the purpose better than ten men in the former case.

The copper roller was heated by the insertion of four red-hot iron bars. After two or three pieces of cloth had been rolled, a fresh wooden roller was employed, since the heat, if long continued, was sure to split it. The heated wooden roller was wrapped, as soon as it was removed, in cloths, and placed in an atmosphere from which it might acquire moisture. The heat and pressure thus employed to extend the gilding were found greatly to improve the brilliancy of white and yellow silks, but to impair that of crimson, green, and other colours.

It will be seen, from what we have already stated, that brocade was a very costly article of dress; not only from the amount of precious metal employed, and the tedious and expensive mode of manufacture, but also from its evanescent nature. A brocade dress was very liable to become tarnished; when such was the case, the mode of washing was also costly. A soft brush, dipped in warm spirits of wine, is said to be the only method of restoring tarnished brocade. Brocade powders were in vogue at the time this sumptuous dress was in fashion, but they were ineffectual, because, from the extreme thinness of the metal, it was easily scratched or worn away by the friction even of the most impalpable powder.

Brocade continued to be used in ornamenting drawing-room furniture, long after it had ceased to adorn the persons of beaux and belles. In 1798 some brocade chair-bottoms, for Carlton House, were produced at Spitalfields, and are said to be still in existence. There is no doubt that should the vane of that weathercock, Fashion, again point out gold and silver brocade as a desirable article of attire, our modern manufactures would soon equal, if not surpass, the costliest productions of former days. To those who are anxious for such a result let us recommend the remarks of the *Spectator*, which, though written a hundred and thirty years ago, are still applicable, because they refer to one of the weaknesses of human nature.

A furbelow of precious stones, a hat buttoned with a diamond, a brocade waistcoat or gown, are standing topics of conversation. In short, they only consider the drapery of the species, and never cast away a thought on those ornaments of the mind, that make persons illustrious in themselves and useful to others. When persons are thus perpetually dazzling one another's imaginations, and filling their heads with nothing but colours, it is no wonder that they are more attentive to the superficial parts of life than the solid and substantial blessings of it.

The love of novelty often leads us from old established favourites to less interesting objects; and when Fashion points the way, we follow as if this tyrant directress were incapable of error.—Phillips.

POISONOUS ARTICLES OF FOOD.

I.

MUSHROOMS.

Many hundred species of the *Agaricus*, or mushroom, are enumerated by botanists, as being distributed over nearly the whole of Europe, and great part of Asia, Africa, and America. Of these, the people of this country esteem but three as eatable, but the inhabitants of various parts of the Continent make use of a much greater number, and it is said that in the Tuscan markets not less than three hundred different species are offered for sale. Almost all writers agree in considering mushrooms as very difficult of digestion, and hence an improper article of diet, and it is certain that the most wholesome kinds will sometimes produce, in those not accustomed to them, symptoms of indigestion, of a most distressing, and often alarming kind.

Dr. Christison and others believe that they may be rendered less unwholesome by more attention being paid to the cookery than is usual, but, as every medical opinion must have its opposite, Dr. Schwœgnöchen, of Leipzig, declares they are only innocent when eaten raw, and states, as a proof thereof, that during his botanical excursions he has always been accustomed to diet himself like the peasants, viz., upon crude mushrooms and bread, and, so far from finding them disagree with him, he has always on these occasions gained flesh. Pallas states also that the inhabitants of many districts of Asiatic Russia live almost exclusively during Lent on bread and fungi, which they eat almost indiscriminately, and without evil consequences. Mushrooms formed a favourite dish among the ancient epicures, and frequent mention is made of them by Horace, Juvenal, and Martial.

Dr. Greville enumerates twenty-six species, growing abundantly in various parts of Great Britain, most of which are considered as eatable abroad. We, however, reject all but three, as dangerous or poisonous: these are, 1, *Agaricus campestris*, the common mushroom, so well known by its fragrant odour, and button-like form, when young; 2, *Agaricus Georgii*, which sometimes reaches an immense size; 3, *Agaricus pratensis*, or Scotch bonnet, occurring in the patches termed fairy rings. It is very possible by this limitation we may reject several kinds which might be safely eaten, yet is such an error much safer than the too indiscriminate use of this vegetable on the Continent, for the French medical journals record no less than one hundred deaths from eating mushrooms, as occurring in the vicinity of Paris, during the space of thirty years, viz., between 1749 and 1783. Severe epidemics have been also sometimes traced to the same source. It has been sometimes attempted to explain the deaths arising from eating mushrooms, as depending upon some peculiarity, or idiosyncracy, as it is termed, in the individuals affected, which disposes them to be injuriously affected by articles of diet, which in their general operations are harmless, or even beneficial, to others; or again, it has been supposed that the mushrooms may have become mingled with some poisonous matter, by being cooked in copper vessels. Undoubtedly, both these causes may have produced injurious, or even fatal effects, in some cases, but an immense number of experiments and observations have proved beyond doubt, that a truly poisonous substance, (the nature of which is however not known,) is contained in several species of mushrooms. As a proof, however, either that some constitutional peculiarities sometimes influence the operation of this vegetable upon the system, or that climate and situation modify its properties, we may mention that the *Agaricus piperitis*, or pepper mushroom, which is thought by us to be very hurtful, is largely consumed in Russia. The *Agaricus muscarius*, the red, or bug (so called from its destroying this animal) mushroom, which is deemed

rankly poisonous in Britain, is used by the Russians and Kamschadales for the purposes of intoxication. Dr. Langsdorff says the Asiatic Russians, who call it *muchomoree*, use it dry in the form of pills, and that one large, or two small mushrooms are enough for a day's debauch. In an hour or two the same symptoms which with us follow taking wine manifest themselves, and a surprising degree of muscular activity and energy is developed for a while. The Koriacks use it as a tonic for invalids, much as we do wine.

That mushrooms were occasionally poisonous, was well known in ancient times, and the writings of the Greek, Roman, and Arabian physicians, contain many cautions and precepts upon the subject. They have even been criminally given in order to produce this effect, and thus Agrippina, the mother of Nero, is said to have poisoned Claudius by their means, to accelerate the succession of her son, who called them "food for the gods," and frequently had recourse to them for similar purposes, during his iniquitous reign. The instances of accidental poisoning in modern times are unfortunately but too frequent. The symptoms are often five or six hours before they manifest themselves, even fifteen or twenty-four have sometimes elapsed: the fatal substance having undergone the process of digestion, and mingled with and corrupted all the juices of the body, before exhibiting any external signs of its presence: these even are often obscure and unintelligible at first; an irrepressible propensity to laughter and general exhiliration, usually herald in the vomiting, griping, and diarrhœa; then follow sooner or later, fainting, stupefaction, and death. The effects of the poison are as slow in their progress as in their onset, and the patient may linger days before the fatal moment arrives. The musician, Schobert, and his family, together with a friend and a physician, having partook of a dish of mushrooms, gathered near Paris, were all poisoned. Mr. Brande has related the case of a man who gathered some small mushrooms in the Green Park, the *Agaricus semi-globatus* of Withering, and *Agaricus glutinosus* of Curtis. Himself, wife, and four children, were all severely affected, but by the use of appropriate measures recovered. Mr. Parrot relates also the case of a family of six, who supped on stewed mushrooms: the father and mother eventually recovered after a severe illness, but three of the children were carried off after lingering a few days. The noxious species of mushrooms are equally hurtful to man as to animals, and no kind of culinary treatment seems to deprive them of their dangerous properties. A very small admixture of a bad with a good species suffices to produce ill effects.

In regard to the treatment of persons poisoned by mushrooms, or indeed by any other description of deleterious food, it cannot be too generally known that the prompt administration of an emetic is the best remedy. This may consist of a spoonful or two of mustard, or a scruple of sulphate of zinc, mixed with water. As the poison of the mushroom is so slow in its operations, the use of the emetic will often be attended with the happiest results. The subsequent treatment of the case will depend upon many circumstances, of which we need give no account, as it should only be undertaken under the superintendence of a professional man.

An important and difficult point has properly occupied the attention of many observers, viz., the signs by which we can distinguish the dangerous from the innocent species of mushroom. The botanical definitions are very minute, yet not sufficiently directed to this point, while the sensible differences between the esculent and the noxious kinds depend sometimes upon such shades of distinction, as to be quite inappreciable by those little accustomed to such investigations. Nevertheless, some facts, gathered from practical observation, have been accumulated, which render considerable assistance to the enquirer.

Miller thus describes the common mushroom:—"When young it appears of a roundish form, smooth like a button, which with its stalk is white, especially the fleshy part of the button: the gills within, when broken, are livid. As it grows larger, it expands its head by degrees into a flat form: the gills are at first of a pale flesh colour, but become blackish by standing."

Professor Orfila says,—"All those growing in moist and marshy grounds, in the shade, as in forests, must be rejected as bad; they are always found too soft, porous, and moist, and have a dirty disagreeable appearance. Those which change colour when cut, have a strong pungent odour, or are of a shining or varied colour, are dangerous; so are those which insects have bitten and left, or which have bulbous or soft stems, or fragments of skin glued to their surface. Those of very rapid growth and decay are bad. Although many are said to lose their poisonous properties when dried, this observation will apply only to some species."

A recent writer upon the subject states, that all mushrooms having the following characters are poisonous: 1st, when the cap is very thin in proportion to the gills; 2nd, when the stalk grows from one side of the cap; 3rd, when the gills are of equal length; 4th, when a milky juice is present; 5th, those which soon run into a dark watery liquid; 6th, when the collar surrounding the stalk is thready, or resembling a spider's web.

De Candolle declares that all kinds may be eaten, with the exception of the following:—1st, coriaceous or ligneous kinds; 2nd, those which have collars in their stems; 3rd, those which have an acrid taste; 4th, those which turn blue on being cut.

Dr. Greville recommends collectors to taste all they gather, and to reject those which produce an acrid or astringent sensation, as also those which have a pungent or disagreeable smell. The importance and difficulty of this point may be judged of by the circumstance of some of the continental nations having found it necessary to pass formal decrees upon the subject. Thus it has been ordered in Austria, that the inspector of the market must produce proof of having attended lectures upon the subject, and familiarized himself with the botanical distinctions of the various species of mushrooms, while works upon the same topic, must be in the possession of the magistrate. Similar decrees were issued in France in the time of Napoleon.

INFANTILE POEM,

WRITTEN FOR LORD HASTINGS' CHILDREN BY LADY FLORA HASTINGS.

GET up, little sister, the morning is bright,
And the birds are all singing to welcome the light;
The buds are all opening—the dew's on the flower!
If you shake but a branch, see there falls quite a shower.

By the side of their mothers, look, under the trees,
How the young fawns are skipping about as they please;
And by all those rings on the water, I know
The fishes are merrily swimming below.

The bee, I dare say, has been long on the wing,
To get honey from every flower of the spring;
For the bee never idles, but labours all day,
And thinks, wise little insect, work better than play.

The lark's singing gaily; it loves the bright sun,
And rejoices that now the gay spring is begun;
For the spring is so cheerful, I think 'twould be wrong
If we did not feel happy to hear the lark's song.

G t up, for when all things are merry and glad,
G od children should never be lazy and sad;
For God gives us daylight, dear sister, that we
May rejoice like the lark, and may work like the bee.

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Saturday Magazine.

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TURKEY AND THE TURKISH PROVINCES.

GROUP OF SULIOTS.

ALI PACHA, AND THE SULIOTS.

HAVING, in a former article, briefly described the situation and nature of the small tract of country forming the native habitation of the Suliots, as also the character and mode of life of the inhabitants; we shall now take a cursory glance at the changes which have occurred in the political position of this little republic within the last fifty years.

With the exception of Mehemet Ali, the present Pacha of Egypt, few Turkish governors of recent times have equalled in vigour and successful cunning Ali Pacha of Joannina, a man who raised himself from a very humble situation to that important post. Ali was born in the small town of Tepeleni, in Albania, in the year 1750. His father, Vely Bey, at the head of a band of robbers, had gained possession of Tepeleni by force, and gradually acquired a kind of sovereignty over the surrounding district. Vely had two wives, of whom Khamco, the mother of Ali, was a woman of uncommon talent, undaunted resolution, and great cruelty; the latter quality she displayed, by poisoning her rival, and the son of the latter, soon after her husband's death, thus securing the governing power to her own son Ali.

Under such a mother, young Ali did not fail to make rapid progress in those manly acts which are so much esteemed in a rude state of society: he became the best horseman, the swiftest runner, and the most expert marksman of the district which he governed. By the united efforts of his mother and himself, he gradually extended the sphere of his power, and became an object of fear and distrust to the beys and agas of the neighbouring territories. He was, in fact, nothing more than what, in other European countries, would have been termed a Captain of Banditti; but the state of government in Turkey is such, that pashas, beys, and agas, are often but little removed from that character. In battle, Ali possessed undaunted courage and great ability; and in intrigues, a sagacious and wily keenness; and these combined, enabled him by degrees to lift himself into the high office of Pasha of Joannina, about the year 1785. He now looked forward to the establishment of an independent sovereignty for himself in Albania and Epirus.

The means which he resolved to take for the completion of this plan, (says the Rev. Mr. Hughes in his interesting Travels in Albania,) were to amass treasures, to keep agents in pay at the Ottoman court, to infuse suspicion of other powers into the minds of the divan, to render himself useful to whatever European state was most able to return his services, and finally to seize upon the property of his neighbours whenever and by whatever methods he could. In the execution of these measures, his rapacity was boundless, his penetration deep, his aggressions innumerable, his perfidy more than Punic, and his success for a time complete.

We are not here writing an account of Ali's life, but only so much of it as is necessary to show the cause of the ruin of the little republic of the Suliots. Passing on then to the year 1792, we find the Suliots attacking and harassing Ali in the southern part of his territory, from a deep hatred of the tyranny which he was gradually introducing. To root out the Suliots became therefore

one of his plans. He collected an army of 10,000 men, and while his preparations were making, he sent letters to the two chief captains of the Suliots, endeavouring to entrap them into a treacherous compact. The treachery was half suspected; the seizure of seventy unarmed Suliots soon afterwards confirmed it; and the Suliots then determined on a firm resistance.

The Pasha advanced with his army towards the Suliot villages, when a proof was given how stout a defence might be made at the passes of the rock leading from the river side: the defiles and narrow inlets speedily became choked with the dead bodies of the Turks; and it was not until the ammunition of the Suliots failed, that they receded to their villages. An act of female heroism now occurred, which has seldom had a parallel in any age or country. The Suliots were retreating to Suli, when Mosco, the wife of Captain Tzavella, rushed out of the town sword in hand, accompanied by many other women similarly armed, and persuaded the troops once more to oppose the advancing Turks. This act roused the enthusiasm of the Suliots to such a degree, that they fell on the Turks with irresistible fury. Mosco soon found the dead body of a favourite nephew; when, kissing his cold lips, she cried, "Since I have not arrived in time to save thy life, I will yet avenge thy death," these words were followed by another attack so overwhelming, that Ali was forced to retreat after having lost nearly all his troops, and the whole of his baggage, ammunition, and arms. A peace, very advantageous to the Suliots, terminated this event.

For about eight years after this period, Ali was engaged in a busy scene of war and intrigue, mixing himself up in the various political negociations between Russia, Turkey, France, and Venice; and endeavouring to advance his own interests by cheating all of them in turn. At length, about the year 1800, he resolved on a second attack of the Suliots: he contrived to make Botzari, their captain, a traitor to his companions; and gained over the neighbouring agas and beys by causing a sheick to give such a translation of certain passages in the Koran as should give a sort of religious air to the contest. The treacherous Botzari did infinite mischief to the Suliots, and then deserted them just at the moment of attack, leaving only 3000 Suliots to defend themselves against 18,000 Turks. The attack was commenced at different points, but resolutely met at all; the infamous Botzari himself headed one of the attacks, but was repulsed so ignominiously that he died soon after of disappointment. For two days the contest between the Suliots and Ali continued, and ended, as before, in the complete defeat of the latter. On one occasion, owing to the peculiar nature of the rocky defiles as a natural defence, 200 Suliots completely defeated 3000 Turks, with the loss of only twenty men.

Ali now determined to blockade the Suliots, by placing five strong bodies of troops in the principal defiles leading up to the villages. These five bodies were promptly confronted by an equal number of Suliot bands, to each of which was attached a troop of females, to provide the food, to relieve the sentinels occasionally when on duty, to supply ammunition, and even to engage in the contests. The defence, in short, was so energetic, that Ali found the siege hopeless. He then turned it into a blockade, with the hope of starving out the Suliots; but they were acquainted with paths unknown to his troops, and were enabled to bring in supplies of food. Foiled at all points, he attempted to make a treacherous truce; and having got seventeen Suliots into his hands, threatened to torture them to death if the place was not surrendered; but such a people was not likely to be moved by fear of death, and his threat was repelled with scorn. He then resolved to try bribery; and sent an offer of a large sum of money to Captain Zerva, one of the most valiant of the Suliots, if he would betray the Republic. The answer of Zerva is worthy of record:—"I thank you, vizier, for the kind regard you express towards me; but I beseech you not to send the purses, for I should not know how to count them; and if I did, believe me that one single pebble belonging to my country, much less that country itself, would, in my eyes, appear too great a return for them. Equally vain are the honours you offer to bestow on me. The honours of a Suliot lie in his arms. With these I hope to immortalize my name and preserve my country."

Every stratagem on the part of Ali failed; but as the blockade was still continued, the Suliots began to feel the fearful effects of hunger: they were obliged to live upon acorns, herbs, and roots, and to grind and mix up the bark of trees with a small proportion of meal. This distress, however, did not lead them to forget the nature of the struggle in which they were engaged: they knew that if once Ali gained possession of their territory, their position would be humiliating in the extreme.

For more than twelve months did this blockade continue; Ali, in the mean time, employing all the arts of cunning and persuasion to induce some of the Suliot chiefs to come over to his cause. These reiterated attempts were generally unsuccessful; but at length he wearied out the Suliots with the length of the blockade and with his unceasing stratagems; and, on December 12, 1803, they capitulated, and obtained leave to emigrate to other lands. But the basest treachery was here shown: the Suliots were divided into two bodies, one of which was to go to the neighbouring town of Parga, and the other to Santa Maura, one of the Ionian Islands; but Ali's troops, in defiance of the compact agreed on, fell on them, and massacred large numbers of the women and children; and only a portion of the Suliots reached their destination. Even these were further persecuted by Ali and his emissaries, and became at length mere wanderers in Corfu, Santa Maura, and Parga.

After the Suliots became extinct as a nation, we find that for many years they made feeble struggles,—now aiding the French,—and now some of the beys and pashas who were hostile to Ali,—but always without regaining their ancient home. Thus they continued until nearly twenty years afterwards, when, through the complex nature of the politics of south-eastern Europe, they found themselves fighting by the side of their old enemy Ali. The Greeks of the Morea, were struggling to throw off the Turkish yoke,—the Turks were determined to resist them to the last,—the Suliots were anxious to get back to their native hills,—and Ali was grasping for power and wealth wherever they were to be obtained. It is therefore not easy to trace, in a brief space, the circumstances which led to a compact between the Suliots and their deadly enemy; but it must suffice to say, that in the year 1822, the Greeks, the Suliots, and Ali, were all leagued together against the Turks. This league terminated by the death of Ali; and soon afterwards the brave but unfortunate Suliots were again compelled to leave their mountain home, and seek for refuge, under the English flag, in the Ionian Islands: 3000 Suliots accepted this refuge, and the rest dispersed themselves among the neighbouring tribes.

During the subsequent contests between the Turks and the Greeks, the Suliots were frequently found serving as volunteers in the ranks of the latter; and at the siege of Missolonghi, and the other engagements which took place during that war, the Suliots were highly distinguished for their skill and bravery. The corps of 500 hundred men, raised and equipped by Lord Byron at his own expense, was composed of Suliots, for whom he had a great admiration. Since the termination of these contests, the Suliots have been restored, in a partial degree, to their former liberty; but their numbers have become so wasted, that they no longer constitute the once formidable band of mountain heroes:—they must be spoken of as an heroic race whose deeds have outlived their perpetrators.

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ON THE PRODUCTION OF DESIGNS BY STAMPING.

The general use of stamps among civilised nations, and especially in our own country at the present day, renders any detail as to the mode of their production in metal, peculiarly interesting; and the more so, because it is generally supposed that these stamps are produced by secret processes, which, if revealed, would tend to encourage forgery, and so occasion loss to the revenue. This, however, is so far from being the case, that the modes of producing the stamps are well known to artists, and may be almost equally well understood by the general reader. The chief security against forgery consists in the talent and ability of the artists, employed to produce these stamps; and that it should be so, seems pretty evident, when we reflect that it is now next to impossible long to maintain secrecy in mechanical processes. Hence, attempts at forgery seem to be precluded by considerations of the inability to command the requisite talent, as well as of the danger and worthlessness of a far-off imitation.

In the manufacture of dies for stamping, the most careful attention is necessary to be given to the *kind* of metal best adapted to the purpose:—steel is generally preferred to all other metals; and this must be not only of the very best quality, but of a peculiar kind, altogether different from that employed in cutlery. It should be rather finely grained, and of a perfectly even and uniform texture. The choice of the steel, however, depends so much on the experience of the die-forger, which is acquired only by practice, that no general rules can be offered.

The best description of steel having been selected, it is formed into the rough die by forging. It is then softened by being carefully *annealed;* that is, the die is embedded in a crucible, full of animal charcoal in coarse powder, and so brought to a red heat; it is then allowed to cool very gradually, the effect of which process is, to make the metal very soft, so that it easily yields to the tools of the engraver. The die is then smoothed externally, and a flat table worked on it at the turning-lathe. The engraver, being furnished with the design, commences by working out the device with small steel tools; and, as the work proceeds, he frequently takes impressions in clay or casts of type-metal, until he is satisfied with the general effect and correctness of his work, as compared with the original design, furnished to him by the artist. A first-rate engraver will frequently devote many weeks, and even months, to the preparation of an important die: we may easily conceive, therefore, how valuable it becomes, and what care is necessary to conduct it safely through the subsequent operations. Unfortunately, the next process, that of *hardening*, is as difficult as it is important; and it should be entrusted to those only, who have acquired considerable experience in the art.

One of the most valuable properties of steel, is its capability of being made hard or soft, according as it is rapidly or slowly cooled after being heated. At the first view, nothing appears so easy as to make a piece of soft, malleable, and ductile steel red hot, and then suddenly cool it in cold water; whereby it becomes hard, fragile, and brittle. But as a die is a mass of steel necessarily of somewhat large dimensions, the process of hardening is attended with peculiar difficulties, not the least of which is, the preservation of all the delicate touches of the engraver's skill. To meet this object, the engraved face of the die is protected with a covering of oil, thickened with powdered charcoal; sometimes pipe-clay is added to this: some employ a pulp of garlic: but pure lamp-black, mixed with linseed oil, is the best protecting composition. A thin layer of it is spread on the engraved part of the die, which may also be further guarded by a projecting iron ring. The die is next placed with its face downwards in a crucible filled with powdered charcoal, and then heated to redness: it is afterwards by means of a pair of tongs taken out, and plunged into a large volume of cold water, and rapidly moved about so long as a bubbling hissing noise continues: it is left in the water till it becomes quite cold: if a singing noise should continue after the bubbling and hissing have ceased, the operator is tolerably well assured that the work of the engraver is thrown away; for the die has cracked.

The action of this process upon the die is rather to *case-harden* it, than to harden it *throughout*. The interior parts of the die seemed to be held in a forced state of dilation, while the external parts are permanently dilated. The theory of the process of hardening steel is intricate; but it is well illustrated by an experiment recorded in Tomlinson's *Manual of Natural Philosophy*. A cylindrical steel die, such as is used for medals, was made to fit exactly a hollow cylinder of its own diameter: the die was then hardened: and it was thus found impossible to make it enter the cylinder. But when the cylinder and the die contained within it had been both subjected to the process of hardening, the substance of the cylinder being such as not to display the usual effects of hardening, this latter, upon being cooled, merely returned to its former dimensions, while the die, in dilating and remaining permanently dilated, became distorted in a manner, as if it had been violently driven into a space much smaller than itself: a ridge of metal was, in fact, raised around the two end-wise circumferences of the die, and it was thus kept fixed within the cylinder by an enormous force. This remarkable fact has been thus explained by M. Biot:—It is supposed, that the instant when the steel, being strongly heated, is suddenly cooled, the cooling effect is first experienced by the exterior layers of the metal, which become moulded, as it were, and fixed upon a centre, still strongly heated and dilated; by which means the die is made to occupy larger dimensions than it would have done, if it had been allowed to cool gradually. The molecules near the centre of the mass, cool at a later part of the process; but the exterior layers, having already acquired a fixed state, retain the interior particles in a condition of great expansion, and thus determine the volume which they occupy, and prevent them from approaching so near to each other, as they would have done, had the whole mass been allowed to cool gradually.

When the process of hardening the die has been successfully performed, other protective measures are adopted: sometimes a mild description of tempering is employed, which consists in placing the die in cold water, heating it to the boiling point, and then allowing it to cool very slowly. This process makes the die less liable to crack in very cold weather. Sometimes the die is protected by being thrust into an iron ring, which exactly fits it when red-hot, and in cooling binds the die with very considerable force; thereby preventing the spreading of external cracks and fissures, and allowing a greater and more effectual power to be exerted upon it in the subsequent process for obtaining punches.

Supposing now that the die has been properly hardened and that the protecting composition has fulfilled its object in preserving the design from injury and from the action of the fire; it is then cleaned and polished, and constitutes what is technically called a Matrix. This is used as the *parent* of numerous *punches*, or steel impressions for producing stamps *in relief*. For this purpose a block of steel is chosen of the same quality, and with the same precautions, as in forming the original die; and this steel, being carefully softened, is turned, like the matrix, with a perfectly flat table at the bottom, being left broad and conical at the top. By means of powerful machinery, a strong pressing force is applied at the conical surface of the punch, and the matrix being very hard, soon causes the soft steel table of the

punch to receive the first germs of a perfect impression: but in this process of compression, the steel itself becomes hard, and requires to be repeatedly *annealed*, or softened, during the operation; otherwise, its surface would split into small cracks, or be likely to injure the matrix. By repeated blows, therefore, in the die-press, and by frequent annealing, the punch is at length completed; and after being examined by the engraver, it is turned, hardened, and furnished with an iron collar, like the matrix, of which it is a perfect copy in all respects, except that the design is *sunk*, instead of being *raised;* —that is, the punch is an *intaglio*, while the matrix is a *cameo;* and consequently, the copies from the punch on paper will, like the original matrix, be cameos also.

The original matrix is in general too valuable to be used in making further punches: these are multiplied by means of another matrix, formed from the first perfect punch, and all of them being fac-similes of the original matrix, may be used in the production of stamps to any amount. For this purpose, a screw-press is usually employed, in which the punch is made to descend with great force upon a die which it accurately fits, and the paper being placed between, receives the impression.

Such then is a general account of the various processes for producing stamped designs *in relief*, upon paper. We do not of course pretend to have described anything more than the *general* practice of this branch of art: there may be many variations in practice, which we do not undertake to develop; the common principles of the processes in use being enough for the information of the general reader.

WHERE there is most love of God, there will there be the truest and most enlarged philanthrophy. No other foundation is secure. There is no other means whereby notions can be reformed, than that by which alone individuals can be regenerated. In the laws of God, conscience is made the basis of policy; and in proportion as human laws depart from the groundwork, error and evil are the sure result.—SOUTHEY.

BE sure to mend that in thyself which thou observest doth exceedingly displease thee in others.—BISHOP PATRICK.

EVERY speculation which tends to suppress a consideration of the Supreme Power and First Cause, has a pernicious moral effect, while the evil is unbalanced by any philosophical good, rather indeed tending to check the pursuits of science.—MACCULLOCH.

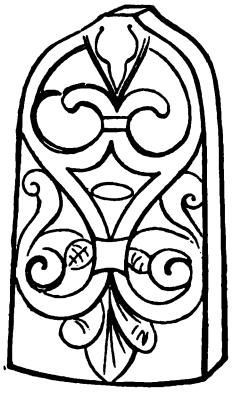
SPIRIT OF BENEVOLENCE.

IF we hope to instruct others we should familiarize our own minds to some fixed and determinate principles of action. The world is a vast labyrinth, in which almost every one is running a different way, and almost every one manifesting hatred to those who do not run the same way. A few indeed stand motionless, and not seeking to lead themselves or others out of the maze, laugh at the failures of their brethren, yet with little reason; for more grossly does *he* err, who never aims to go right. It is more honourable to the head, as well as to the heart, to be misled by our eagerness in the pursuit of truth, than to be safe from blundering by contempt of it. The happiness of mankind is the *end* of virtue, and truth is the knowledge of the *means;* which he will never seriously attempt to discover, who has not habitually interested himself in the *welfare of others*. The searcher after truth must love and be beloved; for general benevolence is a necessary motive to constancy of pursuit; and this general benevolence is begotten and rendered permanent by social and domestic affections. Let us beware of that proud philosophy, which affects to inculcate philanthrophy, while it denounces every home-born feeling by which it is produced and nurtured. The paternal and filial duties discipline the heart, and prepare it for the love of all mankind. The intensity of private attachments encourages, not prevents, universal benevolence. The nearer we approach the sun, the more intense his heat, yet what corner of the system does he not cheer and vivify.—COLERIDGE.

ON CHESS.

IV. ANCIENT CHESS-MEN DISCOVERED IN THE ISLE OF LEWIS. (CONCLUDED.)

THE WARDER.



THE PAWN.

THE WARDERS are armed warriors (*Hrókr* in Icelandic), which here take the place of the rook, or castle, and are represented in a standing attitude, wearing helmets, of various shapes, but chiefly conical, some with, and others without, flaps; but all wanting the nasal-piece. The coat, or gambeson, which most of them wear, descends to the feet; yet, in lieu of this, others have a coat of mail, with a hood which covers the head. They all hold a sword in one hand, and a shield in the other; but the position is varied; the shields in some instances being borne in front, and in others at the side. The shields all bear distinctive marks, like those of the knights; but some of them are of a broader shape, and less elongated. In general the warders are more varied from each other than the similar figures of the other pieces. One peculiarity in the figures of three of the warders tends to strengthen the belief of their being of Norwegian or Icelandic workmanship, and that is the singular manner in which they are represented *biting* their shields.

Now this was a characteristic of the Scandinavian BERSERKAR, who were unarmed warriors, subject to fits of madness on the eve of battle, under the influence of which they performed the most extraordinary feats. They are thus described by Snorre:—"The soldiers of Odin went forth to the combat without armour, raging like dogs or wolves, biting their shields, and in strength equal to furious bears or wolves. Their enemies they laid prostrate at their feet; neither fire nor weapon harmed them: this frenzy was called Berserksgangr."

The PAWNS are of various shapes and sizes, but chiefly octagonal, with conical terminations: on one is a fret-like ornament, and on another some scroll-like adornment: the others are plain.

The shields of the knights and warders are highly curious, as presenting a series of devices,—the immediate precursors of hereditary armorial bearings,—in greater variety than is to be found on any other existing monuments of such an early period. The Gothic nations, however, from the earliest times, were accustomed to paint their shields of various colours; and from the Romans they might easily have learned to adopt different insignia. From some passages in the *Voluspa*, *Saxo*, and *Egil's Saga*, it has been assumed by many of the northern antiquaries, that the ancient Scandinavians adorned their shields with representations of their exploits; but Sperlingius, in his "Collections" on the subject, argues strongly against it, and affirms that before the twelfth century no traces of any devices on shields are to be found among them. The only device on shields noticed by Snorre is that of a cross, which Sperlingius conjectures was first introduced by King

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Olaf the Saint, at the commencement of the eleventh century. Most of the shields depicted in the Bayeux tapestry, bear crosses of different shapes; and this is likewise the case with those of the chess figures: some of the former also exhibit a species of dragon.

The ancient chess-men discovered in the Isle of Lewis have been made the subject of an extremely beautiful and learned essay on the introduction of chess into Europe, by F. Madden, Esq., F.R.S., published in the twenty-fourth volume of the *Archæologia*. Mr. Madden supposes these chess-men to have been executed about the middle of the twelfth century, by the same extraordinary race of people who, at an earlier period of time, under the general name of *Northmen*, overran the greater part of Europe, and whose language and manners are still preserved among their genuine descendants in Iceland. For the confirmation of his opinion, he refers to the material of which they are composed, to the general costume of the figures, and the peculiar forms of some of them, to the locality in which they were found, and to the testimonies of numerous writers in ancient and modern times, touching the existence of the game of chess in Scandinavia, and the skill of the natives in carving similar figures.

And first, with regard to their material, Mr. Madden assumes on good evidence, that they are formed out of the tusks of the animal called in Icelandic ROSTUNGR, or Rosmar, and in other parts of Europe by the names of morse, walrus, or sea-horse. The peculiarities of structure in the tusk of this animal are shown in a remarkable manner throughout the entire series of the chess-men, and most unequivocally so in the draught-men, which were necessarily cut transversely through the tusk. The economy of the artist is likewise visible in fashioning his figures according to the portions of the teeth best calculated to serve his purpose.

The estimation wherein the tusks of the walrus, from which these chess-men were unquestionably carved, were held by the northern nations, rendered them a present worthy of royalty; and this circumstance is confirmed by a tradition preserved in the curious *Saga of Kröka Ref*; or *Kröka the Crafty*. It is there related, that Gunner, prefect of Greenland, wishing to conciliate the favour of Harald Hardraad, king of Norway, (A.D. 1046—1067,) by the advice of Barder, a Norwegian merchant, sent to the king three of the most precious gifts the island could produce: these were, *first*, a full-grown white tame bear; *second*, a chess-table, or set of chess-men, exquisitely carved; *third*, a skull of the ros-tungr, with the teeth fastened in it, wonderfully sculptured, and ornamented with gold.

The ancient Norwegians, and more particularly the natives of Iceland, seem to have been at a very early period famous for their skill in carving implements and figures in bone; and this talent was exerted chiefly in sculpturing chess-men from the tusks of the rosmar. The archbishop of Upsala, in his *Antiquarian History of the Northern Nations*, informs us that it was usual amongst them to cut the teeth of the morse in the most artificial manner for the purpose of making chess-men. Olaus Wormius, writing about a century later, states that the Icelanders were accustomed, during the long nights of winter by their fireside, to cut out various articles from "whales' teeth." "This," he continues, "is more particularly the case with chess-men (at which game they excel); and I possess some specimens of these, distinguished by being of two colours, white and green; which are sculptured so exquisitely, that each piece expresses in feature, dress, and attitude, the personage it is designed to represent." Thus, also, in the figures discovered in the Isle of Lewis, the costume, &c., of every piece has been especially attended to, and, so far as that mode of proof can be admitted, evince them to have been executed in the twelfth century.

The spot, on which these figures were found, favours in every respect the hypothesis adopted by Mr. Madden. The Hebrides, or Southern Isles, were subject to the invasion of the Vikingr, or Sea-kings, from the end of the eighth century, and during the reign of Harald Harfager, about the year 875, were rendered tributary to the throne of Norway. The outer range of the Hebrides, in which that of Lewis is comprehended, was chiefly peopled by Scandinavians; and they continued to have princes of their own, until the period of King Magnus Barefoot's expedition, in 1096, who ravaged the Isle of Lewis with fire and sword, and added the Hebrides to his own dominions, thenceforth to be governed by a dependant lord. These islands remained under the seignory of the kings of Norway, until the year 1266, when they were formally ceded to King Alexander the Third, of Scotland, by Magnus the Fourth, in consideration of the yearly payment of one hundred marks, and the additional sum of four thousand marks, payable within four years.

Between those islands and the northern, as well as the western, coast of Scotland and Iceland, the closest intercourse existed for many ages. As the communication was kept up in small vessels (called "Byrdinga" by the Icelanders), the chances of shipwreck, in case of a storm, were great; and accordingly, many instances are on record of the destruction of ships coming from Norway to the isles.

It would appear, therefore, most probable that the chess-men and draught-men discovered in the Isle of Lewis, formed part of the stock of an Icelandic *kaupmann*, or merchant, who carried these articles to the Hebrides, or to Ireland, for the sake of traffic, and that the ship, in which they were conveyed, being wrecked, these figures were swept by the waves on shore, and buried beneath the sand-bank, which, for the space of nearly seven centuries, contrived to accumulate before the fortunate discovery took place which restored them to light.

SINGULAR CASE OF SOMNAMBULISM.

IN one of my rambles, I met with a very singular instance of somnambulism, in the daughter of a Circassian noble, Noghai Selim Guarrai, near the river Ubin. The girl was, probably, about twelve years of age, and had been suffering from the disease for the last two years. During the prevalence of the fit, which generally lasted from one to three weeks, she was accustomed to employ herself at embroidery, sing to her lute, or deliver extempore poetry in a singing tone, always prophetic of some event that was to occur, of importance to the country; but, except on these occasions, she never uttered a word, nor answered a question, and seemed to address her warnings rather to some invisible spirit, than to the persons around her; she also prescribed for the sick, whom she mentioned by name, gave counsel to the warrior, reproved the wicked, and assured her countrymen, that in their contest with Russia they would be ultimately successful; not one word of which remained in her recollection when she awoke from her magnetic sleep. While this aberration of her faculties continued, her features wore an unnaturally serious expression for so young a girl: her smell, also, was so acute, that she could discover the approach of any person she knew at a considerable distance, to whom she evinced the most capricious dislike or partiality: her health appeared to suffer materially from these attacks, as she invariably awoke from her trance pale and evidently much fatigued.

These somnambulists, or as the French call them, *clairvoyantes*, so peculiar to mountainous countries, seem to form a phenomenon in animal magnetism not yet perfectly understood. I met with a similar case some years since, during a fishing excursion in the neighbourhood of Lindau, on the banks of the lake of Constance, in the person of the daughter of the Baron von Rader: she was about the same age as our Circassian Cassandra, and, like her, gifted with prophecy. The duration of the fit, and the symptoms of the patient, were also similar, except that the young German lady frequently remained cataleptic for several hours, which I did not observe in the other.—SPENCER'S *Travels in Circassia*.

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ON AUTOMATON FIGURES.

I.

AMONG the various ways in which human ingenuity has displayed itself, one of the most remarkable is the construction of machines which shall, to a considerable extent, imitate the motions and actions of a living being. We are sometimes led to regret that such extraordinary powers of invention should be expended on the production of a machine possessing no real *utility* to society: but still it is so far useful, that it keeps alive a spirit of mechanical invention, which, at an after period, may be of incalculable benefit. Most of the great specimens of automatic mechanism, to which the general name of *automata* is applied, were produced at a time when there were no railroads,—few canals,—few tunnels,—still fewer steam-engines,—no locomotive carriages,—no power-looms,—no spinning-jennies,—and what is of more importance, when there was not diffused among society in general that thirst for manufacturing improvements which so greatly distinguishes the present age. A really ingenious mechanical inventor at the present day has many ways of bringing his ingenuity to a profitable market, by applying it to manufacturing machinery, and we do not consequently hear so much at the present day, as in bygone times, of the production of elaborate playthings, requiring years for their production, and possessing no commercial value. We can therefore admire the results of ingenuity shown by the older mechanists, without judging them too harshly for not doing that which the spirit of their times scarcely afforded them a field for doing.

We propose to present here a brief description of such automata, or self-moving figures, as have gained for themselves a reputation among ingenious men.

In the *Saturday Magazine*, vol. iii., p. 156, is a description of the very remarkable automatic figures in the great clock of Strasburg cathedral. We will now present some details of other clocks remarkable for the ingenuity of the figures connected with them. In the fourteenth century, James Dondi constructed for the city of Padua a clock which was long considered the wonder of the age. Besides indicating the hours, it represented the motion of the sun, moon, and planets, as well as pointed out the different festivals of the year.

The clock at the cathedral at Lyons was long celebrated as being one of the most ingenious ever constructed. We do not know whether it still exists, but in its most perfect form the following was the nature of its construction. It exhibited, on different dial-plates, the annual and diurnal progress of the sun and moon, the days of the year, their length, and the whole calendar, civil as well as ecclesiastical. The days of the week were indicated by symbols, fitted to the purpose, and the hours were announced by the crowing of the cock, thrice repeated, after it had flapped its wings, and made other movements. When the cock had ceased crowing, angels were made to appear, who, by striking various bells, performed the air of a hymn. The annunciation of the Virgin was also represented by moving figures, and by the descent of a dove. When all this ceremony was concluded, the clock struck the hour. On one of the sides of the clock was an oval dial-plate, where the hours and minutes were indicated by means of an index, which possessed the peculiar power of lengthening or shortening itself, so as to adapt its length to the various diameters of the oval plate. This clock was made by Lippius de Basle, and was repaired in the seventeenth century by Nourisson.

The royal apartments at Versailles once contained a singular clock, constructed by Martinot. Before it struck the hour, two cocks, on the corners of a small edifice, crowed alternately, clapping their wings. Shortly after this, two lateral doors of the edifice opened, at which appeared two figures, bearing cymbals, beat upon with clubs by two sentinels. When these figures had retired, the centre door was thrown open, and a pedestal, supporting an equestrian statue of Louis the Fourteenth issued from it, while a group of clouds, separating, gave a passage to a figure of Fame, which came and hovered over the statue. A tune was then performed by bells; after which the two figures re-entered; the two sentinels raised up their clubs, which they had lowered, as if from respect for the presence of the king; and the hour was then struck.

Many other specimens of ingeniously-constructed clocks have been recorded; but these will be sufficient here: we will therefore proceed to other automata.

It is difficult properly to estimate the statements of ancient writers on this subject. Mention is made, that, so long ago as 400 years B.C., Archytus of Tarentum, a Pythagorean philosopher, made a wooden pigeon that could fly. The writers who have recorded this seem to have known but little respecting its truth. One said that if the pigeon fell, it could not rise again by itself: another says that it flew by mechanical means, being suspended by balancing, and animated by a secretly-enclosed spring.

The imitations of various animals have been very numerous, and we have records of several, the authenticity of which is undoubted. One mechanist constructed the figure of a swan, as large as life, which gracefully curved its neck, or turned it round, as if to dress the plumage of its wings or body: having done this, it bent down its head, and, taking a metal fish in its bill, swallowed it. Another person constructed a peacock, which could erect or depress its crest, and unfold its tail: it could likewise lift a piece of money in its bill, and perform many of the movements peculiar to a peacock. But Maillardet, a Frenchman, surpassed these efforts, by producing machines in which complicated actions were to be concentrated in a small space. He constructed an oval box, about three inches in length. The lid suddenly flying open, a bird of beautiful plumage, not larger than a humming-bird, started up from its nest within the box. The wings began to flutter, and its bill opening, with the tremulous motion peculiar to singing-birds it began to warble. After producing a succession of notes, whose sound well filled a large apartment, it darted down into its nest, and the lid closed again. The time that i occupied to perform its routine of actions was about four minutes, and it produced four distinct kinds of warbling. Maillardet also constructed an automatic spider, a caterpillar, a mouse, and a serpent, all of which exhibited the peculiar movements of the living originals. The spider was made of steel, and the legs were levers which were successively advanced by springs within the body of the animal. It ran on the surface of a table for three minutes, and its course was so devised as to tend inwards towards the middle of the table. The serpent constructed by the same artist crawled about in every direction, opened its mouth, hissed, and darted out his tongue.

John Müller, of Nuremburg, is said to have constructed a wooden eagle, which flew from the city of Nuremburg, aloft in the air, met the Emperor Maximilian a good way off, saluted him, and preceded him back to the city gates; and to have also constructed an iron fly, which in the midst of a party of friends, flew from Müller's hand, and passed round from guest to guest. But from some contradictions in the accounts left by Baptista Porta, Kircher, &c., we may justly be allowed to doubt these narrations.

About a century and a half ago Truchet constructed, for the amusement of Louis the Fourteenth, an automaton, which the king called his little opera. It was about sixteen inches long, thirteen inches high, and one inch and a quarter deep. It represented an opera, in five acts, changing the decorations at the commencement of each. The actors performed their parts in pantomime; and the

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representation could be stopped at pleasure, and made to recommence. Another contrivance, made for the amusement of the same monarch—who had a strange mixture of the great and the small in his character—must have been worked by very elaborate mechanism. There was a small coach drawn by two horses: a lady sat in the coach, and a servant and a page stood behind it. This coach being placed on a table at which the king was seated, the coachman smacked his whip, and the horses immediately began to move, their legs advancing in the proper succession. When the cavalcade reached the edge of the table, it turned at a right angle, and proceeded along that edge. When it arrived opposite to the place where the king was seated, it stopped and the page got down and opened the door, upon which the lady alighted, and, with a curtsey, presented a petition to the king. After waiting some time, she again curtseyed, and re-entered her carriage: the page then resumed his place, the coachman whipped his horses, which began to move, and the footman, running after the carriage, jumped up behind. This was made by M. Camus, who wrote a description of the general nature of the mechanism employed: but his details were not sufficiently minute to account for the almost inconceivable movements of the figures. We have frequently seen in the public streets of London an exhibition in which a carriage rolled rapidly round a circular table, the horses' feet moved, and the coachman smacked his whip: but there was no dismounting,—no curtseying,—no presentation of a petition,—no footman running after the carriage, &c.

Perhaps one of the most beautiful specimens of automatic mechanism ever constructed was the *duck* of Vaucanson. This machine in external form exactly resembled a real duck; the wings being anatomically correct in every part. But not only was the exterior an exact copy of the original; the resemblance was also carried to internal parts: every bone in the real duck had its representative in the automaton; cavities, curvatures, protuberances, were all imitated. This duck imitated the actions of a real one to an extent that surpasses all we have yet detailed. It exhibited those quick motions of the head and throat so peculiar to the living duck: it produced the quacking sound; it drank water in that manner peculiar to billed animals: it swallowed food with avidity, and actually *digested* the food in the stomach. This latter remark is so astonishing that we must make one additional observation concerning it, in order that it may be believed at all. The stomach contained some chemical substance, which acted on the food introduced into it, so that the food left the body of the artificial duck in a form very different from that in which it entered. The authenticity of this narration is undisputed. The automaton was seen in action by Montucla, the eminent French mathematician, who wrote an account of it.

There are many other instances of similar ingenuity on record; such as a sheep which imitated the bleating of a natural one, and a dog watching a basket of fruit: when any one attempted to purloin the fruit, the dog gnashed his teeth and barked; and if the fruit were actually taken away, he did not cease barking till it was restored. But we have stated sufficient to give some idea of the manner in which ingenuity has been directed to this subject in the imitation of birds, &c. In another article we shall describe some of the principal *androides*, or machines resembling the human figure, and so contrived as to imitate certain movements of a living being. By referring to the *Saturday Magazine*, vol. viii., p. 161, the reader will find an account of a very ingenious automaton ship and sea.

It is not either fineness of wit, or abundance of wealth, or any such like inward or outward ornament, that makes the difference between men, and renders the one better than the other; but the firmness of good principles, the settledness of the spirit, and the quiet of mind.—Bishop Patrick.

THE JERBOA.

This pretty little animal belongs to a genus which approximates considerably to the rats, properly so called, but is sufficiently distinguished by the shortness of the fore-legs, and the length of the hinder extremities. Owing to an error long prevalent among naturalists, who imagined that these animals made use of their hind feet only in walking, and never employed the fore feet for that purpose, the genus was named *dipus*, or two-legged. A more attentive consideration of the structure of these animals has proved that the Jerboa is incapable of sustaining itself for any length of time on its hind-feet, though commonly seen in that posture. When alarmed, or wishing to proceed at a rapid rate, it takes prodigious leaps and falls upon its fore-feet, but elevates itself again with so much rapidity, that it almost appears as if it constantly maintained the erect posture. The fore-feet are, however, chiefly employed as the means of rest, and of conveying food to the mouth.

There is much in the appearance of the Jerboa to remind us of the kangaroo. The form of the body bears a general resemblance; the hinder limbs are much stronger than the fore-part; the tail is very long; the ears are pointed and elongated; and the eyes are large and round. Still there are important differences between these animals, which sufficiently prove that it would be incorrect to follow Erxleben in classing kangaroos with Jerboas, under the name *Jaculus giganteus*.

The body of the Jerboa is covered with soft silken hairs; the tail also is usually covered with smooth hairs to its extremity, which is terminated by a tuft. The general colour of the animal is a clear fawn on the upper part, and white on the under parts of the body; in the males the tints are less deep than in the females; the size of the former is also smaller than that of the latter.

The tail is indispensable to the Jerboa for the performance of those extraordinary leaps for which the animal is so remarkable: it is likewise necessary for them in raising themselves on their hind-legs; and when for the sake of experiment, they have been either wholly or partially deprived of their tails, they have had their powers diminished proportionably, being in the one case unable to run or leap at all, and in the other, very much limited in their motions.

The species which has been the best observed is the Gerbo, or Egyptian Jerboa, living in troops and digging burrows in Egypt. In the hot and sandy regions, and amid the ruins which surround modern Alexandria, these animals are commonly seen. Without being exactly wild or ferocious in their character, they are extremely unquiet and wary. They come abroad in search of food, which consists of corn, nuts, roots, &c., but at the least noise re-enter their holes with precipitation. Their burrows consist of several galleries, and the Arabs have a mode of taking these animals alive, by closing up the issues of the different galleries, with the exception of one through which they must go out. They hunt them for their flesh, which, although not the best of meat, is in considerable request among the Egyptians. Their skins, likewise, are employed in the manufacture of ordinary fur.

Another species is the *Alactaga*, under which name some naturalists describe Jerboas, having *five* toes on the hind-feet, as a genus distinct from that of the Jerboas having but *three*. The Alactaga is about the size of a common squirrel. The fur is very soft and pliant, of a yellowish fawn colour over the body, varying with a grayish brown. The under part of the body, and the interior of the limbs are white. The tail is longer than the body, covered with similar hair for two-thirds of its length, and terminating in a tuft, half white and half black. This species is found in the deserts of Tartary, on the sand-hills which border the Tanais, the Volga, and the Irtisch. Gmelin says that these animals collect

herbs and roots during summer, form them into separate heaps, and transport them by degrees to their burrows. when they are sufficiently dried by exposure to the air. They seek their provisions by night, and besides herbs, succulent plants, fruits, and roots, they feed on insects and small birds. They are said also to devour one another, always commencing with the eyes and brain. To the west of Tartary lie extensive deserts, where the bulbs of tulips and of various other plants growing abundantly in that arid soil, afford nourishment for the Alactaga. In preparing its burrow, this animal scrapes away the earth with great activity, excavating with its fore-paws, and tearing away the roots with its teeth. It is able to foresee the approach of the cold or rainy season, and closes its burrow with surprising punctuality. It is remarkably sensitive of cold, and a very slight change of temperature will reduce it to its lethargic state. A great degree of heat likewise produces a similar effect.

The swiftness of these animals when pursued is so great that they scarcely appear to touch the earth, and it is said, that even a man on horseback cannot overtake them. It is very difficult to preserve them in captivity, unless they are provided with a sufficient quantity of earth or sand to dig into. They may be fed with carrots, fruit, cabbage, bread, &c.

The Jerboas of India are described by General Hardwicke as being very numerous on cultivated lands, and particularly destructive to wheat and barley crops. The burrows of this species are very spacious, and the animals lay up considerable hoards of ripening corn, which they cut just beneath the ears, and convey entire to their common subterraneous repository, which when filled is carefully closed, and not opened again till supplies abroad become distant and scarce. Their favourite food may be considered the different sorts of grain, bnt when these fail they have recourse to roots, &c.

About the close of the day, (says Hardwicke,) they issue from their burrows, and traverse the plains in all directions to a considerable distance; they run fast, but oftener leap, making bounds of four or five yards at a time, carrying the tail extended in a horizontal direction. When eating they sit on their hind legs like a squirrel, holding the food between their fore-feet. They never appear by day, neither do they commit depredations within doors. I have observed their manners by night, in moonlight nights, taking my station on a plain, and remaining for some time with as little motion as possible I was soon surrounded by hundreds, at the distance of a few yards; but on rising from my seat, the whole disappeared in an instant, nor did they venture forth again for ten minutes after, and then with much caution and circumspection. A tribe of low Hindoos, called Kunjers, whose occupation is hunting, go in quest of these animals at proper seasons, to plunder their hoards of grain; and often, within the space of twenty yards square, find as much corn in the ear as could be crammed into a common bushel. They inhabit dry situations, and are often found at the distance of some miles out of the reach of water. In confinement, this animal soon becomes reconciled to its situation and docile, sleeps much in the day, but when awake feeds as freely as by night. The Hindoos above mentioned, esteem them good and nutritious food.

It was for a long time believed that common as the Jerboa is, on extensive sandy plains of both the old and new continent, yet that in similar tracts in Australia no such animal was to be found. It has now, however, been satisfactorily ascertained that these animals do exist in Australia. Sir Thomas Mitchell in his "*Three Years' Expeditions into the Interior of Australia,*" describes an animal found in the reedy plains near the junction of the Murray and the Murrumbidgee, on the northern boundaries of Australia Felix. Its fore and hind legs resembed those of a kangaroo, and it used the latter by leaping on its hind quarters in the same manner. It was not much larger than a field-mouse, but the tail was longer in proportion than even that of a kangaroo, and terminated in a hairy brush about two inches long.

It is probable that as the country becomes better known, Australia will not be found deficient in animals which though numerous in other parts of the world, have not yet been discovered there, and are said not to exist in that extensive continent.

THE JERBOA.

EARLY RISING.

IT is related that King George the Third, who made the cause of longevity a subject of investigation, procured two persons, each considerably above a hundred years of age, to dance in his presence. He then requested them to relate to him their modes of living, that he might draw from them, if possible, some clue to the causes of their vigorous old age. The one had been a shepherd, remarkably temperate and circumspect in his diet and regimen; the other, a hedger, had been noted for his irregularity, exposure, and intemperance. The monarch could draw no inference, to guide his inquiries, from such different modes of life, terminating in the same result; but, on further inquiry, he learned that both men were alike distinguished by a tranquil easiness of temper, active habits, and EARLY RISING.

THE hardest rain only wets the body, but the hard word cuts the heart.—LOVER.

WHAT is there of an exciting nature in the common events of life, and the usual course and uniformity of nature? Very little. However wonderous the works of the creation may be, habit has so accustomed us to behold them, that they are familiar to our eyes; they become matter of fact, and science has taught us to comprehend the nature of many phenomena, which might otherwise have appeared incredible. But when we seek for an unattainable object, however fallacious its attraction may be, the mind is roused to energetic action. In our vain pursuits of ideal perfection, the mind may be compared to a focus in which our burning thoughts are concentrated until we are consumed by disappointment.

False doctrines and fallacious opinions, need all the aid of imagination's vivid colours to disguise their real form with a goodly outside. We may in general conclude that enthusiasts are at first deceived themselves, to become in turn deceivers. Seldom does man display sufficient humility to admit that he has erred in his favourite doctrines, and how much less will he be disposed to confess his deviation from rectitude, when imposture becomes the source of wealth, and power and hypocrisy a trade.

It is, however, fortunate that errors generally assist the developement of truth. The progress of the Christian faith, was materially forwarded by the absurdities and fallacies of all other religions; and Helvetius has truly observed, that if we could for a moment doubt the truth of Christianity, its divine origin would be proved by its having survived the horrors of popery. False theories led Columbus to correct geographic conclusions, and Galileo's discoveries overthrew his own former theories.—MILLINGEN.

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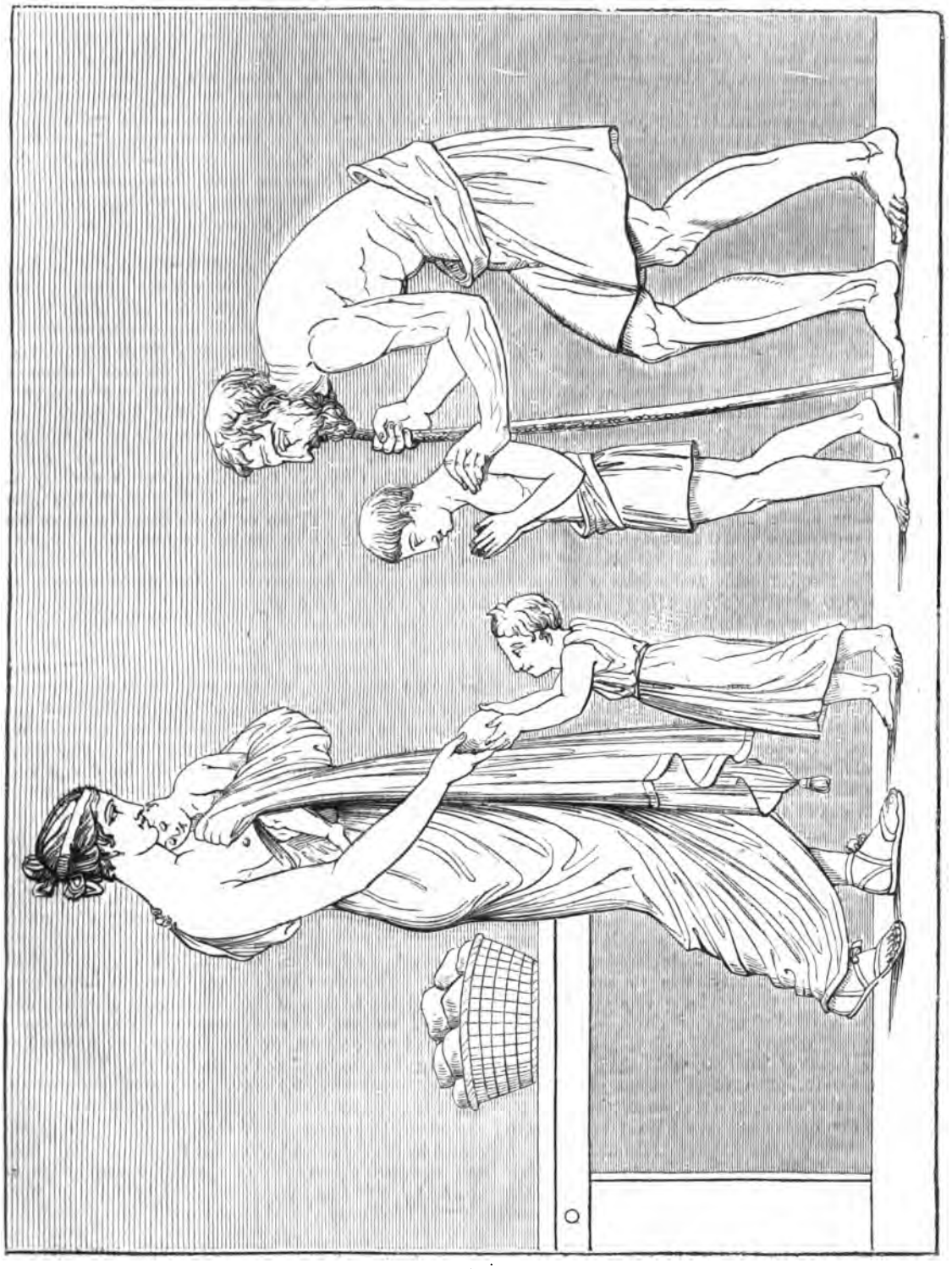

CHARITY. FROM A BASSO RELIEVO BY CANOVA.

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CANOVA AND HIS WORKS.
III.

AT the period of Canova's arrival at Rome, painting and sculpture were at a very low ebb. The spirit of improvement which had begun to distinguish the age, in other respects, had not yet extended its influence to these arts. Canova was received in the most gracious manner by the Venetian ambassador, and entertained in his palace. This statement is supported by the letters of Canova himself and by those of the younger Falier; so that the accounts which have appeared of his distress, and of the neglect which he suffered on his first arrival at Rome, are not to be received as correct. The ambassador at that time was the Cavaliere Zuliani, an enlightened and generous protector of the arts. Wishing to judge for himself of the merits of the sculptor, he sent for the model of Dædalus and Icarus; and invited the most celebrated artists and connoisseurs to inspect a new work of art. Canova accompanied these individuals into the apartment where stood his last performance; and previously to its examination, was introduced to them as the author of the work. The company stood around the group surveying it with strict scrutiny; and for some time maintained a profound silence. The style was so different from that of existing art, that each seemed reluctant to venture an opinion on its merits. At length Hamilton the painter advanced, and cordially embraced the trembling artist, congratulating him on his work, and advising him to prosecute the course he had so evidently pursued of constantly referring to nature, and in addition, to pay assiduous attention to the works of antiquity.

The merits of the young sculptor were now fully acknowledged, and his patron Zuliani soon gave him an opportunity of commencing what he had long desired, a group on some heroic subject. The material was ordered by the ambassador, and the subject was left to the judgment of the artist. Canova selected that of Theseus vanquishing the Minotaur, and a mass of statuary marble, value 300 crowns (about 63*l.* sterling), soon arrived, and filled Canova with delight. His letters of this period are full of the praises of the ambassador and admiration of the beautiful marble on which he was about to work. Canova laboured with great diligence but with secrecy at this important task, in an apartment of the Venetian palace to which no one was permitted to have access. His ostensible employment was a statue of Apollo, about half the natural size, which on its completion was exposed to public inspection at the same time with one of the best works of Angelini, who was then ranked among the best sculptors of Italy. Notwithstanding this circumstance, which might have been expected to operate unfavourably for our young sculptor, his performance was very much admired and even compared with the Minerva of Angelini in a manner unfavourable to the latter. Meanwhile the secret labours of Canova approached their termination, and his Theseus in all its beauty was to surprise the people of Rome. The ambassador gave a grand entertainment to the most distinguished characters in that city, and while they were engaged in disputes concerning a model of the head of Theseus, which had been purposely left in the reception room,—some maintaining that it represented one personage, some another, but all agreeing that the cast must have been taken from a work of Grecian sculpture—Zuliana exclaimed, "Come, let us terminate these disputes by going to see the original." All were astonished, and eagerly followed to the spot where Canova's Theseus, victorious over his cruel foe, was placed in the most advantageous light. Pleasure and stonishment pervaded the whole assembly, and the work was unanimously pronounced to be the most perfect which Rome had beheld for ages. Canova was afterwards heard to say that death itself could scarcely be more terrible than the mental sufferings he endured, while the earlier of these occurences was passing.

We must not omit to state that the application of Canova's early patron to the Venetian government was successful in procuring for him a pension of 300 ducats, limited to a term of three years, that he might in Rome perfect himself in his profession and reflect honour on the republic. This pension, though of great importance to the sculptor, did not much exceed 60*l.* sterling per annum.

Canova was now selected to erect a monument in honour of Clement XIV., but hesitated to undertake the work on account of this pension, which he considered as placing his time and occupations under the disposal of the republic. He therefore repaired to Venice and laid the subject before his patrons, who generously left him to direct his application to whatever subjects he deemed most conducive to his future improvement and welfare. Canova now permanently established himself at Rome; but the ambassador Zuliani, having been recalled by the senate, in order to become Plenipotentiary to the Ottoman Porte, the Venetian palace was no longer open to our artist, and he therefore opened a studio in the *Strada Babbuino.*

Canova was in his twenty-fifth year when he thus took up his abode in Rome; and was decidedly the most accomplished artist of the day. He now began to be exposed to the hostility and misrepresentations of envious rivals;—some were envious of the applause bestowed on his Theseus,—others were jealous at his good fortune in obtaining the monument on which he was now employed,—while both classes feared the effect his rising fame might have on their fortunes. Though these circumstances could not fail to wound the feelings of one endued with Canova's sensibility, yet his modesty of deportment, and dislike of retaliation carried him through the trial. Praise or blame failed to injure the tone of his mind. "To praise," he used to say, "what can I answer; to the censures of well-wishers, I must listen in silence; for, if wrong, their feelings would be hurt by telling them so,—if correct, I endeavour to profit by their remarks." When urged to refute some injurious remarks which had been made on his works, in some of the literary journals, he replied, "My works are before the public, and that public has every right to judge them; but, for my own part, my resolution is not to reply to any critical observation whatsoever, otherwise, than by exerting every effort to do better." Two years were passed by Canova in arranging the design and composing the models for the tomb of Ganganelli (Clement XIV.), and two years more in the execution. His labours were most exhausting, for at that time he could not afford to avail himself of the services of others. This long expected work was exposed to the public in 1787, and was found sufficient, of itself, to establish the fame of Canova, as the greatest artist of modern times.

Canova's professional engagements now multiplied rapidly. Numerous productions of minor importance employed his leisure, while his principal attention was bestowed on another monument, which he was commissioned to execute, to the memory of Rezzonico, Clement XII., to be placed in St. Peter's. This beautiful production occupied five years of diligent study, and it is worth while to mention, as a proof of Canova's careful method of working, that the two lions represented in the monument were not finished without long and repeated observation of the forms and habits of the living animals. Wherever lions were to be seen, Canova constantly visited them at all hours, to ascertain their natural expresssion in different states of action and repose, of ferocity or gentleness; and one of the keepers was even paid to bring information, lest any favourable occasion should pass unimproved. One of the most faultless and classical of Canova's works was a statue

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of Psyche, executed about this time, and designed as a present to the Ambassador Zuliani, who died while the statue was on its way to Venice. This celebrated figure afterwards became the property of Napoleon, by whom it was presented to the queen of Bavaria.

Two different groups of Cupid and Psyche also occupied the talents of our artist, and by these and other proofs of genius his name and reputation became widely extended. He received a flattering invitation from the Russian court, pressing his removal to St. Petersburgh, which offer he gratefully declined. A monument to Admiral Emo, of Venice, was the next important work in which Canova was engaged, and afterwards the much admired group of the parting of Venus and Adonis. The revolution throughout Europe now checked for a time the progress of the fine arts, and compelled Canova to seek a retreat from scenes which so much excited his abhorrence, in the quiet of his own native village of Possagno. There he remained a year, and occupied himself chiefly in painting.

Soon after his return to Rome, appeared the *Perseus* of Canova. It was a grand and classical production, and was called "Il Consolatore" (the consoler), because it appeared at a time when Rome was mourning the plunder of her galleries and museums. In 1802 Canova presented to Italy the celebrated group of *Creugas* and *Damoxenus*, which was, like the Perseus, purchased by the papal government and placed in the Vatican. Among Canova's heroic compositions, we must likewise mention his statues of Paris; of Palamede; the combat of Theseus with the Centaur; the Hector and Ajax; and the Hercules and Lychas; which last was considered the most terrible conception of Canova's mind. The varied excellence of these performances cannot be here dwelt upon, though each deserves particular notice. Yet, highly as we may esteem Canova's attempts at the grand and terrible, it appears evident that his chief excellence consisted in the faithful representation of graceful and elegant subjects. Hence, his favourite subjects were those of youth and beauty: and hence the fame which resulted from his production of the *Cupid and Psyche*, the *Hebe*, the *Dancing Nymphs*, and above all, the *Graces*. When Italy was stripped of its most valuable sculptures, Florence was deprived of its celebrated "Venus de Medicis," and Canova was engaged to supply a successor. Having stipulated that the statue to be produced should not occupy the vacant pedestal of the absent goddess, or be considered as a presumptuous attempt to *copy* that sublime production, he undertook the work. The Venus of Canova is elegantly conceived, and has a noble expression; but represents the woman rather than the goddess. His *Venus Victorious* afforded him greater satisfaction. This was a statue, the head of which was a portrait of Paolina Buonaparte, Princess Borghese, whose fine style of countenance harmonized admirably with the ideal figure. The *Awakened Nymph* was of a somewhat similar character, and was purchased by his late majesty, George the Fourth.

We have not been able to arrange these performances of our artist precisely according to chronological order, but we must now return to the year 1802 when Canova, at the request of the First Consul, repaired to Paris, and carefully modelled from life the bust of Napoleon. On this occasion he was entertained with munificence, and various honours were conferred upon him. Inducements were also held out to tempt him to take up his residence in Paris; but the prospect of the most flattering distinctions could not wean him from his beloved Italy. He also disliked French taste: "They are not inspired," he would say, "with genuine love of art: it is merely a love of display." Highly interesting conversations passed between Napoleon and Canova, during the stay of the latter in Paris. The humanity of Canova's disposition made him a decided lover of peace, and he took every opportunity of declaring his true sentiments. Buonaparte, who delighted in the conversation of men of genius, often listened with calmness and attention to his views, but when these went near to implicate his own actions, he would exclaim, "Come, citizen Canova, parlate senza tema," (How! citizen Canova, you speak without fear.) "Parlo da nom sincero," (I speak without flattery,) was the laconic reply. By the particular desire of Napoleon, he examined the Musée of the Louvre that he might suggest any improvements in the arrangement of those treasures of which other collections had been despoiled. Being then asked by the consul if he did not think them judiciously arranged, he answered, "They were certainly better placed in Italy." The bust of Napoleon was a noble performance, and faithfully represented the features of that remarkable man, though as years passed, the increasing obesity of the emperor diminished the likeness. It is now in the possession of the Duke of Wellington.

Of the funeral monuments executed by Canova, one of the grandest, most solemn and imposing, was the monument of the Arch-Duchess Maria Christina, daughter of Maria Theresa, and wife of Prince Albert of Saxony. It is placed in the church of the Augustines at Vienna, and consists of nine figures, a lion, and medallion, all of the natural size. The groundwork is a pyramid of grayish marble on a plain square basement, from which two steps lead to a doorway in the centre of the tomb. A train of mourners is approaching this doorway. *Virtue*, a young female of afflicted, yet dignified mien, accompanied by two young virgins, is carrying in an urn the ashes of the deceased. Then follows *Beneficence* supporting an aged and infirm old man, behind whom is a child in the attitude of prayer. Opposite to these is the genius of Saxony, resting on a couchant lion, and mournfully regarding the train. Above, *Felicity* with an attendant cherub is transporting to heaven the portrait of the princess.

In the more simple class of sepulchral marbles, one of the most pathetic is the grand relievo on the tomb for the daughter of the *Marchese di Santa Croce*. This young lady was cut off by sudden illness on the very day appointed for her marriage. The way in which Canova treated the death scene, and the unutterable woe expressed in the countenance of the afflicted mother, was so touching that numbers were surprised into tears at the sight, and a lady who had suffered a similar loss actually fainted away on beholding it.

In 1815, when it pleased the Allied Powers to restore to Italy the treasures of art of which she had been despoiled, Canova was entrusted with the superintendence of their removal, and as soon as this important commission was completed, he set out on a visit to the British metropolis. Here he received the most brilliant welcome from the Prince Regent, and from the nobility and men of talent. Canova always spoke with great satisfaction of this visit, and his friends considered his reception in England as the highest in his long list of honours.

On his return to Rome the title of Marquis of Ischia was conferred on him, with a pension of 3000 crowns per annum. This elevation in rank was received by Canova with his accustomed simplicity and modesty. He attributed every vicissitude in his own lot, as well as in that of others, solely to the dispensations of an all-wise and good Providence. His mind appeared to become more and more susceptible of serious impressions, and he now proposed gratuitously to exercise his skill on a colossal statue of *Religion*. The model filled Italy with admiration, but owing to a disagreement among cardinals and princes as to the site it was to occupy, the obstacles opposed to it caused him to relinquish the work. Canova's income arising from his new dignity was appropriated by him entirely to benevolent purposes. He patronized poor artists, relieved distress, and dealt his bounty liberally among the peasants of his native

village, Possagno. In 1819 he repaired to that spot, and gave the necessary directions for the erection of a beautiful church at his own expense, and every succeeding autumn repeated his visit. In the intervals between these visits he still continued his labours, and by over-exertion at this period is supposed to have hastened his end. The winter of 1821-22 witnessed a more than ordinary amount of labour. Visiting Naples in connexion with his equestrian statue of Ferdinand, the reigning sovereign, that climate which had always proved uncongenial to him, increased a slight illness from which he was suffering. He partially recovered on his return to Rome, and on the succeeding autumn set out for Possagno. This journey appeared to increase his malady; and on leaving that village to return to Rome, he was unable to proceed farther than Venice, where, at the house of his friend Francesconi, he breathed his last. His perfect calmness and resignation prevented his friends from seeing his real danger. He appeared absorbed in meditation, and spoke little. Thus when his friends were admiring the radiant and sublime expression of his countenance, he died on the morning of Sunday, the 13th of October, 1822. He was buried at Possagno with great solemnity, and the news of his decease was received throughout Europe with demonstrations of sorrow.

A WISE Christian will think on rain when the sun shineth, and remember sunshine when dark rainy clouds gather over him.

DR. MALKIN, formerly master of the Grammar School at Bury, in Suffolk, has, in a *Father's Memoirs of his Child*, related facts so astonishing of his son, that, though some allowance must be made for the partiality of a parent, they furnish abundant evidence of extraordinary and precocious talent.

Thomas Williams Malkin was two years old before he began to talk, but he was familiar with the alphabet almost half a year sooner. Before he could articulate, when a letter was named, he immediately pointed to it with his finger. From the time that he was two years old, when the acquisition of speech seemed to put him in possession of all the instruments necessary to the attainment of knowledge, he immediately began to read, spell, and write, with a rapidity that would scarcely be credited by any but those who were witnesses of its reality. Before he was three years old he had taught himself to make letters, first in imitation of print, and afterwards of handwriting, and that without any instruction, for he was left to follow his own course in pursuits of this nature. On his birth-day, when he had attained the age of three years, he wrote a letter to his mother in pencil, and a few months afterwards addressed others to some of his relatives. At four, he had learned the Greek alphabet, and made such progress in Latin as to write an exercise every day, with a considerable degree of accuracy. Before he had reached his fifth year he not only read English with perfect fluency, "but," says his father, "understood it with critical precision." He had acquired a happy art of copying maps with neatness and accuracy: he had also made copies from some of Raphael's heads, so much in unison with the style and sentiment of the originals, as to induce good judges to predict that if he were to pursue the arts as a profession, he would one day rank among the most distinguished of their votaries.

In his seventh year he wrote fables, and made one or two respectable attempts at poetical composition: but the most singular instance of a fertile imagination, united with the power of making all he met with in books or conversation his own, is yet to be noticed. This was the idea of an imaginary country, called Allestone, which was so strongly impressed on his mind as to enable him to furnish an intelligible and lively description. Of this delightful country he considered himself as king. He had formed the plan of writing its history, detached parts of which he had actually executed. He drew a map of this country, giving names of his own invention to the principal mountains, rivers, cities, sea-ports, villages, and trading towns. This was one of the last efforts of his genius, for this youthful prodigy of learning died before he had completed the seventh year of his age.

THE PORCUPINE,

Hystrix cristata.

VARIOUSLY modified as are the substances which form the covering of animals, yet they may in general be referred to three primitive types, *i.e.*, hair, feathers, and scales. We are therefore somewhat surprised to find a covering of a perfectly distinct nature, possessed by a tribe of animals, small in number, and unimportant in their position and character. The Porcupine, hedgehog, and a few other animals, though not particularly exposed beyond others to hostile attacks, or of a nature to make aggressions on the animals around them, are yet provided with formidable weapons, in the thick and bristling spines with which they are covered, and which present an impregnable barrier to their enemies.

The Porcupine belongs to the order *rodentia*, or gnawers, of which we have lately given several examples, in the squirrel, dormouse, &c. It has long been naturalized to the south of Europe, whither, as Agricola informs us, it was brought either from Africa or India. It differs, from the Porcupine now seen in Africa, only in having the spines rather shorter and less powerful. The European variety is found chiefly in the kingdom of Naples, and in the southern part of the Roman states. It is one of the largest animals of the Roman states. It is one of the largest animals of the rodentia order, measuring from the nose to the tail nearly three feet.

It has a dull, heavy, and somewhat unpleasant appearance; the eyes are extremely small, the nostrils thick, and the muzzle obtuse. Beside the spines, the body is provided with two sorts of hair, one long and bristly, the other curly and woolly. The head and neck are furnished with the long and bristly kind of hair, and the animal has the power of erecting it, in the same way as the spines. These latter constitute most formidable weapons; they are the largest and strongest on the sides of the animal; and have the structure of the shafts of feathers, covered with enamel, and tapering to a sharp, hard, and fine point. The belief that Porcupines have the power of darting their spines against those who attack them, is altogether unfounded.

The habits of the Porcupine are peaceable and retired. It avoids populous parts, and chooses some solitary spot, where the soil is dry and stony, and exposed to the south-east or south, for the formation of its burrow. The short muscular limbs, and powerful claws of the porcupine, are well adapted for making the necessary excavation. This is generally very deep, and has two or three outlets. In this retreat it hybernates during the colder months, but does not fall into so deep a lethargy as some of the other genera. On the first fine day of spring, it may be found awake again, and in search of food. Its extreme timidity causes it to remain in its burrow during the day-time, and the time for procuring its food is, therefore, from evening twilight till sunrise. As darkness approaches, it cautiously draws near to the principal entrance of the burrow, and looks around to see that all is safe; nor will it venture itself entirely out-

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side while there is any reason to apprehend danger. When, in the search after food, it meets with an unexpected attack, it always endeavours to regain its burrow; but if this is impossible, it turns away its head, and presents its side, where, as we have said, the spines are strongest. It has likewise the power of rolling itself up into a ball, in the manner of the hedge-hog, and thus presenting to its adversary an uninterrupted surface of spears. Notwithstanding the anxiety which it always evinces to keep its head from injury, there are few animals that can bite harder, or inflict more deep and dangerous wounds. The power of its teeth may be observed in its efforts to escape when kept in confinement. The thickest and hardest boards soon yield to its constant gnawing, and even strong iron wire is insufficient to keep it; the cage, therefore, is generally lined with sheet-iron.

The senses of the Porcupine appear to be, with the exception of smell, extremely obtuse: the ears are but little developed, the eyes small, and the tongue but little extensible. The food of this animal consists of roots, fruits, and tender leaves. Thunberg states, that its usual food, near the Cape, is the root of a beautiful plant called *Calla Æthiopica*, which grows even in the ditches, about the gardens; but he adds that it will frequently deign to put up with cabbages and other vegetables, and sometimes commits great depredations in those gardens.

The ordinary powers of inferior animals, are in general wholly insufficient to avail against the spines of the Porcupine: it has, therefore, in fact, few enemies to fear but man, who esteeming the flesh of this animal as good and agreeable to the palate, frequently hunts, or seeks it out for the gratification of his appetite. Porcupines are commonly brought to the markets at Rome and sold for food. They are eaten roasted by the Brazilians, the Brasil variety being generally fat, and its flesh white. The negroes of Guinea make great use of them, and they are also used as food at the Cape. The method of taking them is often as follows. The breach by which this depredator enters gardens is first discovered; a musket is then loaded, cocked, and placed opposite to the breach. To the trigger of this musket a string is tied, and led along the barrel to the muzzle, where a carrot or turnip is fixed. The porcupine, by taking this bait, pulls the trigger and is shot.

Porcupines, properly so called, are distributed through India, Southern Tartary, Persia, Palestine, the south of Europe, and all parts of Africa. They are called *Hystrix*, by the Greeks and the ancient Italians; *Istrice*, by the modern Italians; *Porcépic*, by the French; and *Stachelschwein*, *Dornschwein*, and *Porcopick*, by the Germans; all these names arising from their harsh bristly hairs, like those of the hog. The specific name *cristata*, (tufted, crested, Lat.,) was given by Linnæus, on account of a sort of mane on the neck and back of this species.

The Canada Porcupine, (*Hystrix dorsata* of Linnæus, and *Urson* of Buffon,) is a very sluggish animal, with remarkably long hair, and short spines; the latter are scarcely discoverable through the hair, except on the head, crupper, and tail. They are, however, strong and sharp, and are said to be so formed, as to appear when magnified as if barbed at the tip with numerous reversed points or prickles. Like the spines of the common porcupine they are but slightly attached to the skin, and can be loosened with great ease: the animal is so far aware of this circumstance, that when annoyed or disturbed it will sometimes brush against the legs of the offending party, and leave several of the spines sticking in the skin. These spines often prove fatal to wolves and dogs in the countries where this animal abounds.

Their points, (says Dr. Richardson,) which are pretty sharp, have no sooner insinuated themselves into the skin of an assailant, than they gradually bury themselves and travel onwards until they cause death by wounding some vital organ. These spines, which are detached from the porcupine by the slightest touch, and probably by the will of the animal, soon fill the mouths of the dogs who worry it, and unless the Indian women carefully pick them out, seldom fail to kill them.

The larger kinds of snake are great enemies to the porcupines; but at the same time destroy themselves by this prickly kind of food. The snake seizes the porcupine by the head, and sucks it in; the quills which were flattened down while the body was going in, afterwards become erect and kill it. An enormous snake has been found dead with the quills of the porcupine sticking through his body.

The haunts of the Canada Porcupine are easily discoverable by the appearance of the trees in the vicinity, the bark of which is its favourite food. It feeds on the bark of several of the fir tribe, and on the buds of various kinds of willow; it is said also to be fond of sweet apples and young maize, which it eats in a sitting posture, holding the food to its mouth with the fore-paws. It makes its retreat under the roots of trees, and sleeps a great deal. It has been observed to dislike being wetted; but the vicinity of water is requisite to it, since it drinks freely in summer, and when streams are no longer accessible it swallows the snow.

The flesh of this animal is said to taste like that of the pig; it is relished by the American Indians, but soon becomes exceedingly distasteful to Europeans. The fur is likewise used; being first deprived of the spines, which are employed by the women as pins. They are also dyed of various bright colours, and worked into belts, shoes, shot-pouches, &c.

The Prehensile-tailed Porcupine, or Couendon, (*Hystrix prehensilis* of Linnæus,) is distinguished by its long, tapering, and pointed tail, one half of which, as well as the whole of the body, is covered with spines. It is a native of many parts of South America, and is formed for living in trees. It is a sluggish animal, and appears to bear a close resemblance to the Canada Porcupine, living in woods, sleeping by day, and feeding on fruits and bark by night. It climbs trees by means of its prehensile tail and of its claws, but is observed to use the former chiefly in descending. When on the ground the motions of this animal are awkward, and it appears quite out of its element, but when hunger rouses it to action it seeks for sustenance in trees, and climbs with some degree of activity. The cry of the Prehensile Porcupine is said to resemble that of a sow; and in defending itself from its enemies, it uses its spiny covering in the same manner, and with similar effect to that of the species before described.

The practice of a bad man is contradicted by the voice of his own heart. When he has committed a fault it declares to him that he might have chosen a contrary part: when he has done a virtuous action it inspires emotions of joy which render him conscious that he is a free agent. This voice within is anterior to all reasoning, and as incapable of being invalidated as any other consciousness.—F.

ON AUTOMATON FIGURES.

2.

In a former article, we have described several singular machines which the ingenuity of mechanists had devised, by which the actions of living creatures were more or less imitated. We proceed to speak of others, in which the human figure and movements were the object of imitation.

Whether or not it be true, as is stated, that Dædalus made a statue, which, if not detained, would run away, is not easy now to determine; we will therefore proceed to later dates. More than one Androides has been constructed, in which the figure wrote and drew. The figure was placed at a table, with a pen or pencil in its

hand, and paper before it. The spectator was desired to dictate any word at pleasure, which was instantly written down by the androides in a fair and legible hand. But in such a case, there is a certain degree of cheating employed; for there is an assistant behind a partition near the figure: the assistant can hear the question asked, and puts in action some machinery of levers, &c., connected with the hand of the figure, by which the words are written down. Still, there is something much more elaborate in this, than in the deception called the *Invisible Girl*, the nature of which was described in the *Saturday Magazine*, vol. 1., p. 61.

Some years ago, Mr. Collinson, in a letter which he wrote to Dr. Hutton, after describing some very ingenious automata constructed by M. Droz, of Neufchatel, says:—

Permit me to speak of another automaton of Droz's, which several years since he exhibited in England, and which, from my personal acquaintance, I had a commodious opportunity of particularly examining. It was the figure of a man, I think the size of life. It held in its hand a metal style (pencil), a card of Dutch vellum being laid under it. A spring was touched, which released the internal clockwork from its stop, when the figure immediately began to draw. M. Droz, happening once to be sent for in a great hurry to wait upon some considerable personage at the west end of the town, left me in possession of the keys which opened the recesses of all his machinery. He opened the drawing-master himself, wound it up, explained its leading parts, and taught me how to make it obey my requirings, as it had obeyed his own: Droz then went away. After the first card was finished, (*i.e.*, after the first drawing was finished,) the figure rested. I put a second, and so on, to five separate cards, all different subjects; but five or six was the extent of its delineating powers. The first card contained, I may truly say, elegant portraits and likenesses of the king and queen, facing each other; and it was curious to observe with what precision the figure lifted up his pencil, in the transition of it from one point of the draft to another, without making the least slur whatever; for instance, in passing from the forehead to the eye, nose, and chin, or from the waving curls of the hair to the ear, &c. I have the cards now by me.

It is evident from this description, that the drawings were made by a strictly automatic figure, without the aid of a concealed associate.

A still better figure, of a somewhat similar kind, was afterwards constructed by Maillardet. This was the figure of a boy, kneeling on one knee, and holding a pencil in his hand, with which he executed not only writings, but also drawings of great excellence. When the figure began to work, an attendant dipped the pencil in ink, and laid the paper on a brass tablet, which was adjusted to a proper position. On touching a spring, the figure began to write, and when the line was finished, the *t*'s were crossed and the *i*'s dotted by distinct movements of its pencil. In this way it executed four beautiful specimens of writing, in French and English, each consisting of several lines. It also drew three landscapes, which, with the writing, occupied about an hour.

The same mechanist constructed an automatic soothsayer, which gave answers to questions asked. He held a wand in one hand, and a book in the other. The questions were engraved on oval medallions. When a spectator put one of these into an open drawer, situated near the figure, it instantly closed with a spring. The figure then rose, bowed, drew circles with his wand, and consulted his book. Having spent some time in apparent study, he lifted his wand, and striking with it the wall above his head, two folding doors flew open, and displayed an inscription denoting the answer to the question. Should the drawer be empty when shut, the soothsayer rose, consulted his book, shook his head, and sat down again: the doors did not fly open. If two medallions were put in together, an answer was given to the lower one. It was, we believe, undoubted, that this exhibition was strictly automatic,—that no concealed confederate was at work.

Some beautiful imitations of musical performers have been constructed. The most celebrated was Vaucanson's flute player. This was exhibited at Paris just about a century ago. It consisted of a figure capable of playing several airs on the German flute, with a precision and delicacy nearly equal to that displayed by a living performer. The figure was about five feet and a half high, and was situated on a fragment of rock fixed upon a square pedestal, four feet and a half high, by three and a half broad. Vaucanson, with a candour that does not often distinguish inventors of this kind, published a work in which every part of the machinery was minutely described. The machinery consisted of a series of bellows, pipes, levers, cranks, wheels, springs, &c., of such extreme complication, that any attempt to describe it here would be tedious and useless. We will merely say that the flute was a *bonâ fide* one, that wind was propelled into the embouchure or mouth hole from the lips of the figure, and that the finger holes of the flute were covered by the fingers of the figure in exact accordance with the changes in the notes desired to be produced. The machine, altogether was so scientific, that it excited the admiration of philosophers, even more than of mere lovers of the marvellous.

The same individual afterwards constructed a pipe and tabor player. This was a figure mounted on a pedestal, and dressed like a shepherd, and was capable of playing about twenty minuets, country dances and other tunes, on a pipe and tabor. These were instruments better known among the pastoral tribes of bygone days, than by the present age. The tabor was a kind of tambourine, struck not with the hand, but with a stick. The pipe was a kind of flageolet with only three finger-holes, so that one hand only is required to play it. Its simplicity, however, is accompanied by a circumstance which renders the automatic performance of it a matter of extreme difficulty; for as there are only three finger holes, a large share of the diversity of tones produced is effected by varying the intensity of the breath or air blown into the instrument. This is difficult to effect by machinery, consequently Vaucanson's pipe and tabor player gained almost as much admiration as his flute-player.

About thirty years ago, Maillardet exhibited an automaton piano-forte player. This was an elegant female figure, seated at a piano-forte, on which she played eighteen tunes. Besides the execution of the music, which was produced by the actual pressure of her fingers on the keys, all her movements were elegant, graceful, and almost life-like. Before beginning a tune, she made a gentle inclination with her head to the auditors: her bosom heaved; and her eyes followed the motion of her fingers over the finger-board. The hands played the natural notes, and the feet played the flats and sharps by means of pedals. This machine was strictly automatic, for when once wound up, it would continue playing for an hour; and the principal part of the machinery employed was freely laid open for inspection.

The latest automatic musician with which we are acquainted, is one constructed by Maelzel, the inventor of the metronome, or time-beating instrument. This automaton, as described in the *Journal des Modes*, was as follows:—From a tent M. Maelzel led out a fine manly-looking martial figure, in the uniform of a trumpeter of the Austrian dragoons. After the figure had been pressed on the left shoulder, it played not only the Austrian cavalry march, and all the signals for the manœuvres of the army, but also a march, and an allegro by Weigl. After this, the dress of the figure was completely changed into that of a French trumpeter of the guard. It then began to play the French cavalry march, also all the signals of the French cavalry manœuvres, as well as a march by Dussek, and an allegro by Pleyel. The sound of the trumpet was said to be pure, and more agreeable than even the ablest musician

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could produce from that instrument, because the breath of a man gives the inside of the trumpet a moisture which is prejudicial to the purity of the tone.

This same Maelzel was the inventor of several instruments, of which inferior imitations are seen in the London streets at the present day; that is, a machine in which imitations of a great number of musical instruments are combined. In one which Maelzel exhibited at Vienna, pieces of Turkish music were produced, as if played by a band of flutes, pipes, cymbals, triangle, double drum, and four trumpets. The trumpet sound was admirable. It was produced from real trumpets, blown by a blast of air within the machine. A double bellows furnished the wind, and a wheel, acted on by a weight, set the whole in motion. The modern instrument to which we have alluded is a kind of hand organ, with a feeble imitation of two or three other instruments.

The most difficult automata destined to produce sound, are those which imitate *speech*. A thorough anatomical examination of the organs of voice is necessary to succeed in these attempts. M. Kempelen, of Hungary, and in our own day Mr. Willis, of Cambridge, have shown that it is possible to produce instruments capable of imitating the sounds of the human voice. But we are not aware how far a strictly automatic speaking figure has been produced; yet it is said that a machine constructed by Kempelen was able to utter these words and sentences:—*opera*,—*astronomy*,—*Constantinople*,—*Vous êtes mon ami*,—*Je vous aime de tout mon cœur*,—*Leopoldus Secundus*,—*Romanum imperator semper Augustus*. In our own day the subject has been taken up by Professor Wheatstone, who exhibited a speaking automaton at the Dublin meeting of the British Association for the advancement of science. In consequence of the recent and important discoveries respecting the mechanism of the human voice, it will not be hazarding too much to say with Sir David Brewster, that "before another century is completed, a *talking* and a *singing machine* will be numbered among the conquests of science."

The last automaton which we can find room to describe, is a rope-dancer, exhibited in London some years ago. This was a little figure, a few inches high, seated on a slender steel rod, which he grasped with both hands. When a spring was touched, the figure descended, but still hung suspended by the hands. After several oscillations, the tumbling began, which consisted in assuming a great variety of attitudes,—sometimes closing the feet and hands together, and swinging with great velocity around the rod. During the tumbling, a musical instrument played by means of other parts of the machinery. After going through all the evolutions, the figure rose up, seated itself on the rod, and bowed to the spectators. An elegant and beautiful automaton of this description is now shown at the Gallery of Practical Science.

We hope the reader will not entertain the idea that many of these details are too *magical* to be true. The magic employed is a very extensive knowledge of mechanical details, an intimate examination of the manner in which sounds are produced by air passing through pipes, and very likely, the attractive force of magnetism. All these are, in one way or other, employed in the production of the startling effects here detailed.

ON THE MANUFACTURE OF GLUE.

THE preparation of this useful article forms a curious and important branch of national industry. The chief use of glue is for binding or cementing pieces of wood together, as practised by the carpenter and cabinet-maker, in which trades very large quantities are constantly employed.

Glue (which is nothing more than gelatine in a dry state) is obtained from the hides, hoofs, and horns of animals; the refuse of the leather-dresser, and the offal of the slaughter-house; ears of oxen, calves, sheep; parings of parchment, old gloves; and, in short, animal skin and (by a late improvement) bones, are all employed for making glue.

The first process in this manufacture is to free the materials from dirt, blood, and other matters which do not afford glue. For this purpose they are steeped in lime and water, and then placed in baskets, and rinsed by the action of a stream of water. They are then removed to a sloping surface, and allowed to drain, and whatever lime remains is deprived of its caustic property by the re-absorption of carbonic acid from the atmosphere, since the presence of lime would prove injurious in the subsequent processes.

The gelatine is removed from the animal matter by boiling. This process is effected in a somewhat shallow boiler, which is provided with a false bottom, pierced with holes, and elevated a few inches, thus serving as a support to the animal matter, and preventing it from burning by the heated bottom of the boiler. The boiler is filled about two-thirds with soft water, and then the animal substances are added: these are piled up above the brim of the boiler, because soon after boiling commences, they sink down below the level of the liquid. The contents of the boiler are occasionally stirred up and pressed down, while a steady boiling is maintained throughout this part of the process.

As the boiling proceeds, small portions of the gelatine are drawn off into egg-shells, when, in the course of a few minutes, if the liquid gelatine becomes, by exposure to the cool air, a clear mass of jelly, the boiling process is complete,—the fire is smothered up, and the contents of the boiler left to settle for ten or twenty minutes. The stop-cock is then turned, and the gelatine flows into a deep vessel, kept hot by being surrounded with hot water, and thus it remains for several hours, during which time it deposits any solid impurities. It is then drawn off into congealing boxes, and prepared as we shall soon explain.

The undissolved matter in the boiler is treated with boiling water a second, and even a third time, and the above process continued until nothing more can be extracted. The subsequent solutions are often too weak to be made into glue, but they are economically used with fresh portions of animal matter.

A clear idea may be formed of this part of the manufacture by the annexed illustration (fig. 1.), which represents a section of three vessels, on different levels. The uppermost vessel, which is heated by the waste heat of the chimney, supplies the animal matter contained in the second vessel with warm water: the third vessel receives the liquid gelatine, and retains it in a fluid state, while the solid impurities are being deposited.

The gelatine is drawn off from this third vessel into buckets, and conveyed to the congealing boxes. These boxes are of deal, of a square form, but somewhat narrower at bottom than at top. The liquid glue is poured through funnels, provided with filter-cloths, into the boxes until they are entirely filled. This process is conducted in a very cool and dry apartment, paved with stone, and kept very clean, so that any glue which may be spilt may be recovered. In twelve or eighteen hours the liquid glue becomes sufficiently firm for the next process, which is performed in an upper story, furnished with ventilating windows, so as to admit air on all sides. The boxes are inverted on a moistened table, so that the cake of jelly may not adhere to it: this cake is cut into horizontal layers, by means of a brass wire, stretched in a frame, and is guided by rulers, so disposed as to regulate the thickness of the cake of glue. The slices thus formed are carefully lifted off, and placed on nets stretched in wooden frames. As these frames are filled they are placed over each other, with an interval of about

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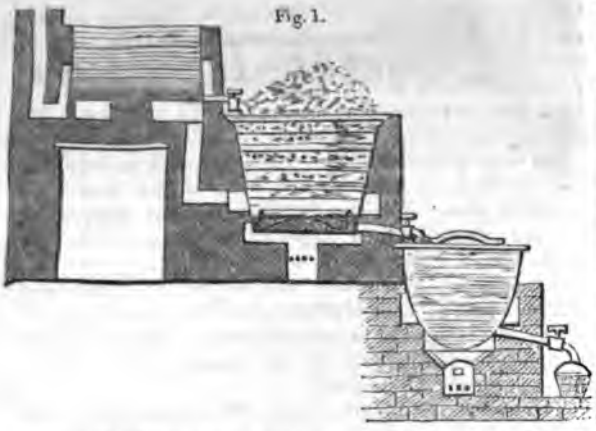
Fig. 1.



three inches between every two frames, so that the air may have free access. Each frame is so arranged as to slide in and out like a drawer, to allow the cakes to be turned, which is done two or three times every day.

An experienced writer on manufactures thus observes, concerning this part of the process:—

The drying of the glue is the most precarious part of the manufacture. The least disturbance of the weather may injure the glue during the two or three first days of its exposure. Should the temperature of the air rise considerably, the gelatine may turn so soft as to become unshapely, and even to run through the meshes upon the pieces below, or it may get attached to the strings and surround them, so as not to be separable without plunging the net into boiling water. If frost supervene, the water may freeze, and form numerous cracks in the cakes. Such pieces must immediately be re-melted and re-formed. A slight fog even produces upon glue newly exposed a serious deterioration, the damp condensed upon its surface occasioning a general mouldiness. A thunderstorm sometimes destroys the coagulating power in the whole laminæ at once, or causes the glue to *turn* on the nets, in the language of the manufacturer. A wind too dry or too hot may cause it to dry so quickly as to prevent it from contracting to its proper size, without numerous cracks and fissures. In this predicament the closing of all the flaps of the windows is the only means of abating the mischief. On these accounts it is of importance to select the most temperate season of the year, such as spring and autumn, for the glue manufacture.

When the glue is properly dried a gloss is imparted to each cake, by dipping it in hot water, and passing over it a brush, also wetted with hot water. The cakes are then placed on a hurdle, dried in the stove-room, or in the open air, if the weather be sufficiently dry and warm It is then packed in casks for sale.

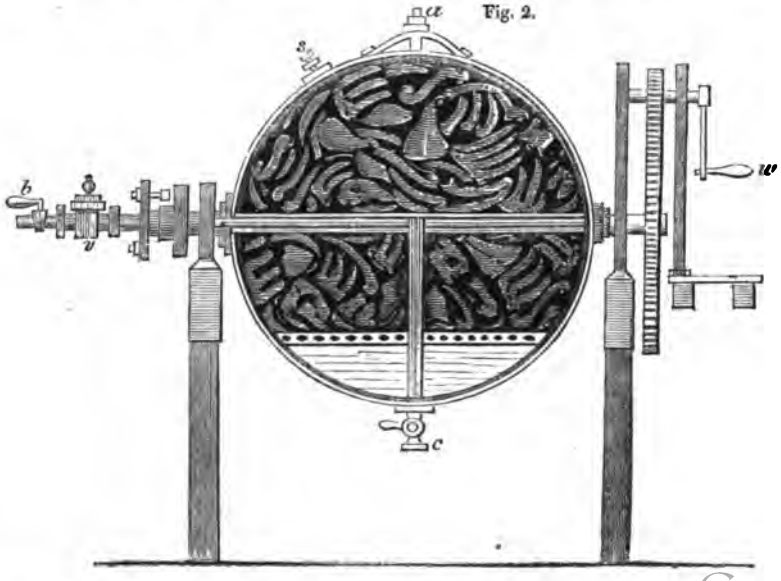
A few years ago Mr. Yardley, of Camberwell, obtained a patent for manufacturing glue from bones, of which nearly one-half the weight consists of solid gelatine.

In this patent process the bones are thoroughly cleansed by being washed in water and lime for three or four days: they are then placed in the globular vessel, called an *extractor*, of which the annexed cut (fig. 2) is a section. The aperture through which the bones pass into the vessel is at *a*, which aperture is closed by screwing up an internal plate tightly against the interior surface of the vessel. The extractor turns upon a horizontal axis, consisting of a strong tube, which at the centre of the vessel proceeds downwards, and conveys steam below the grating upon which the bones rest. Steam, of the pressure of about fifteen pounds on the square inch, is admitted from a boiler, by turning the cock *b*, and passing along the tube, which is furnished with a safety-valve at *v*, it passes to the bottom of the extractor, then rises up through the grating and amongst the bones, and expels all the air from the vessel, through a stop-cock at *s*, which being closed the extractor soon becomes charged with steam. The extractor is moved slowly round by means of the wheel-work at *w*, to shift the position of the bones, and allow the steam to act more perfectly. When at rest, a quantity of the fluid glue collects at the bottom of the vessel, and is drawn off at the cock *c*. The steam continues to act upon the bones for about an hour before the liquid gelatine is drawn off. After every drawing off the steam is admitted, and the process continued as before. The gelatine is collected in an evaporating vessel, and heated until sufficiently thick to solidify when cold: it is then prepared in the usual manner.

It has been found by experiment that when two cylinders of dry ash, one inch and a half in diameter, were glued together, and after twenty-four hours torn asunder, a force of 1260 pounds was required to produce the separation, thus making the force of adhesion equal to 715 pounds per square inch. Another experiment made the force of adhesion to equal 4000 pounds on the square inch.

A delicate kind of glue is prepared by gently boiling shreds of parchment in water, in the proportion of one pound of parchment to six quarts of water, until it be reduced to one quart. It is then strained and boiled to the consistence of glue. Isinglass glue is best prepared by gently heating that substance in spirit.

Fig. 2.



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THE

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TURKEY AND THE TURKISH PROVINCES.

MOUNT OSSA.

MOUNT OSSA, &c., IN THE PROVINCE OF TRIKHALA.

THE foregoing sketch represents a view of Mount Ossa, in Greece, with the village of Baba, leading to the town of Ampelachia, and standing on the river Salympria, in the vale of Tempé. All these are in the province of Trikhala, in European Turkey. As the present aspect and condition of these spots, so celebrated in ancient history and poetry, must be generally interesting to the lover of literature, we propose to say a few words about the mountain,—the town,—the river,—and the vale.

Mount Ossa is in that part of Greece which has all along borne the name of Thessaly, though now included in one of the Turkish provinces. This mountain was once the residence of the Centaurs, of whom we have given an account in the 511th number of this work. Mount Ossa was formerly joined to Mount Olympus, but Hercules, according to ancient story, separated them, and made between them the celebrated valley of Tempé. This separation of the two mountains was probably effected by an earthquake, which happened about 1900 years before the Christian era. Ossa and Olympus, Pelion and Pindus, are famed in ancient fable, as being the mountains which the giants, in their wars against the gods, heaped up, one on the other, to scale the heavens with more facility. Mount Ossa is said to contain a coarse bluish-gray marble, with veins of a finer quality. The mountain-ranges of this country are represented as affording to the traveller the appearance of walls, separating one district from the other.

The town of Ampelachia, which is described as hanging upon the sides of Mount Ossa, is supposed to be the ancient Atracia, which was built by Atrax, an early king of Thessaly. This town was once so famous in all the country round, that "Atracian" and "Thessalian" were synonymous terms. The town now contains about four hundred houses; and Dr. Holland says of it:—

Nothing can be more picturesque than the various groups of buildings which compose it. Rising out of the thick foliage of woods, overhanging the deep ravines of the mountain, their open galleries and projecting roofs render the effect of situation still more singular and imposing to the eye. The oak, olive, and cypress spread over the broken surface on which the town stands, and intermix with the foliage of vineyards; while the loftier ridges of the mountain, receding towards the south, are covered with long rows of pines. A few of the houses are built and furnished in the European manner.

The town of Ampelachia, which is south-west of the Turkish village of Baba, is arrived at from this latter place by an irregular cork-screw road, in some places cut in the rock, and in others carried along the channel of mountain-torrents. Mount Ossa, with the forenamed town and village, is south of the river, which flows eastward, while Mount Olympus is northward of the stream. The same respectable authority which we have before quoted informs us that Ampelachia is interesting, not only for the scenery which surrounds it, but for the kind manners of its inhabitants. They are nearly all Greeks, and though the seat of their habitation is in a spot comparatively secluded and remote, they have been noted for many years for the extent of their com-

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mercial undertakings, and for a character of active intelligence and enterprise, which has procured them a high repute among the different communities of modern Greece. Most of the merchants of Ampelachia have visited or resided in the principal commercial cities of the Continent, and established connexions there, the extent and success of which are manifested in the wealth many of them have acquired. They are chiefly connected with Germany, but they also trade with Constantinople, Smyrna, and other mercantile places of the Levant.

The commerce of Ampelachia is founded in manufacture, and the population of the place is actively engaged in the various processes of making and dyeing cotton thread, the staple commodity of the country. This is likewise the general employment pursued in the other towns and villages of this district. Most of the cotton grown on the plains of Thessaly is brought hither for the use of the manufacturers. It is calculated that the town of Ampelachia furnishes annually about three thousand bales of dyed cotton thread, each bale being reckoned at 250 lbs. Of this quantity nearly the whole is transmitted by land-carriage to Germany,—a traffic which is well regulated, and carried on with much activity by the Ampelachian merchants. The inhabitants of this town have likewise acquired much respect by their general cultivation of mind, and by the aids they have afforded to the literature of their country. There is also a considerable Greek school here, which is said to be in a flourishing state.

The river now called *Salympria*, but in ancient times the *Peneus*, is formed by the confluence of two streams, which flow down from the mountains of Pindus, and unite at the Khan of Malakossi, near the site of the ancient Æginium. The course of this river is eastward, and it falls into the Gulf of Saloniki*. It is said that the Peneus anciently inundated the plains of Thessaly, till the earthquake separated the mountains Ossa and Olympus, and formed the beautiful vale of Tempé, where the waters formerly stagnated. The laurel was once abundant on the banks of this river. The valley of the Peneus, throughout its whole course, is extremely picturesque and interesting, but some of the most extraordinary scenery which it presents is that of the rocks of Meteora, already described, No. 530.

The valley of Tempé was, with the poets of old times, the *beau idéal* of a rural and voluptuous retirement. It is described by them as the most delightful spot on the face of the earth. Here were to be found—

> Cool grots, and living lakes, the flowery pride
> Of meads, and streams that through the valley glide,
> And shady groves, that easy sleep invite,
> And, after toilsome days, a soft repose at night.

Here were verdant walks, which the warbling of birds rendered more pleasant and romantic, and which the gods often honoured with their presence. If this were happiness, well might the poet continue his aspirations, and wish to be transported to this land of "Drowsy-head."

> My next desire is, void of care and strife,
> To lead a soft, secure, inglorious life—
> A country cottage, near a crystal flood,
> A winding valley, and a lofty wood.
> Some god conduct me to the sacred shades,
> Where bacchanals are sung by Spartan maids,
> Or lift me high to Hæmus' hilly crown,
> Or in the plains of Tempé lay me down,
> Or lead me to some solitary place,
> And cover my retreat from human race †.

With the race of the poets it came to pass, in process of time, that all valleys, plains, and woody glens, that were pleasant, either for their situation or the mildness of their climate, were called by the name of Tempé. It is, however, probable that the vale of Tempé was celebrated by poets who had never seen it, and the imagination, therefore, amplified its excellencies. Tempé, properly so called, consists of a celebrated pass or defile between Mounts Ossa and Olympus. This pass is five or six miles in length, and is best described in the words of Dr. Clarke:—

The Peneus occupies the whole of the valley from side to side, with the exception only of the narrow pass afforded by the old paved causeway of the military way, which extends along the right bank of the river. Fragments of the Atracian marble appeared in different parts of this pavement: to afford space for it, even the solid rocks were cut away from the side of the Peneus. Here the scenery possesses the utmost grandeur. The precipices consist of naked perpendicular rocks, rising to a prodigious height, so that the spectator can scarcely behold them from below without giddiness. Livy's description, therefore, in addition to its intrinsic grandeur, has all the majesty of truth. The various colours which adorn the surfaces of these rocks can only be expressed by painting; and how beautiful would the effect be if these masses were faithfully delineated in all their distinct or blended hues, of ashen gray, and green, and white, and ochreous red, and brown, and black, and yellow! Such description by the pen suggests no distinct image to the mind. Upon their utmost peaks, both to the right and left, we saw the ruins of an ancient fortress, once the bulwark of the defile, whose walls were made to traverse the precipices in a surprising manner, quite down to the road. The cliffs are so perpendicular, and the gorge is so narrow, that it would be absolutely impossible for an army to pass while the strait was guarded by these fortifications.

Clarke describes this defile as resembling the pass of Killicrankie, in Scotland, and that of Dovedale, in Derbyshire, but upon a much grander scale. When Neptune, according to one of the fables, opened this outlet for the river, by striking the mountains with his trident,—or when the earthquake or other convulsion of nature occurred,—Olympus and Ossa were separated from each other, and so formed this vast cleft, at the bottom of which the Peneus obtains its outlet. That a sea, once covering the whole of Thessaly, was drained by the opening of this chasm, is not only evident from the position of the strata on either side, but the fact has been regularly handed down by tradition, thus forming a theme of poetical allusion, if not an authentic piece of history.

In the opinion of Dr. Holland, the scenery of Tempé is correctly represented, on a smaller scale, by St. Vincent's Rocks, near Bristol. The Peneus, as it flows through the defile, is not much wider than the Avon, and the channel between the cliffs is of similar contracted dimensions; but the cliffs of the Thessalian mountains are loftier and more precipitous, towering in some places to six or eight hundred feet above the river, and projecting their vast masses with the greatest abruptness over the hollow below.

Where the surface renders it possible, the summits and ledges of the rocks are for the most part covered with small wood, chiefly oak, with the arbutus and other shrubs. On the banks of the river, wherever there is a small interval between the water and the cliffs, it is covered with the rich and widely-spreading foliage of the plane, the oak, and other forest trees, which in these situations have attained a remarkable size, and in various places extend their shade far over the channel of the stream. The ivy, winding round many of them, may bring to the mind of the traveller the beautiful and accurate description of Ælian, who has done more justice to the scenery of Tempé than any other writer of antiquity.

The village of Baba stands at the western extremity of the defile, which would therefore be at the left hand of the picture. In conclusion, we must remark that the topography of these ancient Greek regions is not even now well understood, and is often laid down with little certainty of correctness.

* See No. 530 of this work. At p. 129, col. 1, line 10, for "transmitted," read "transmuted."

† Virgil, 2nd *Georgic*.

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ICEBERGS.

THE term Iceberg, written *Ysberg* by the Dutch, signifies ice-mountain. It is commonly applied to the glaciers of Greenland, Spitzbergen, and other Arctic countries; but is as often extended to the large peaks, mountains, or islets of ice, that are found floating in the sea. The first, or fixed bergs, are prodigious lodgments of ice, which occur in valleys adjoining the coast of the Polar seas. The largest iceberg of this description, seen by Captain Scoresby, is that a little to the northward of Horn Sound, which occupies eleven miles in length of the sea coast. It rises precipitously from the sea 402 feet high, and extends backwards towards the summit of the mountain, to about four times that elevation. Its surface forms a noble inclined plane of smooth snow, and has a beautiful appearance; but the lower parts, in the latter end of every summer, present a bare surface of ice. The front surface of icebergs, generally, is glistening and uneven. Wherever a part has been recently broken off, the fresh fracture is of a beautiful greenish-blue colour, approaching to emerald green; but such parts as have been long exposed to the atmosphere, are of a greenish-gray colour, and from a distance have the appearance of cliffs of whitish marble. These icebergs are wholly produced from rain or snow, the period of their foundation, or first stratum, being frozen, being nearly coeval with the land on which they are lodged: the subsequent increase is produced by the congelation of the sleet of summer or autumn, and of the snow accumulated in winter, which, being partly dissolved by the summer sun, becomes consolidated, and, on the decline of the summer heat, frozen into a new layer of ice. This yearly increase continues until the mass becomes mountainous, and rises to the elevation of the surrounding cliffs. The melting of the snow, which is afterwards deposited on these enormous blocks, likewise contributes to their growth, and by filling up the crevices renders the whole solid. Where such a mass has risen to the height of 1000 or 2000 feet, the accumulated weight, assisted by the action of the ocean at its base, plunges it into the sea, and it is driven southward by the winds and currents, and known to mariners under the name of iceberg; and from its cavities the whalers fill their casks with pure fresh water.

Icebergs occur in many places in the Arctic and Antarctic regions: in Hudson's Strait, Davis's Strait, and Baffin's Bay, they are frequently of astonishing magnitude. Ellis describes them as sometimes occurring of 500 or 600 yards thickness. Frobisher saw one iceberg which he judged to be "near fourscore fathoms above water." Captain Middleton saw bergs three or four miles in circumference, 100 fathoms under water, and a fifth or sixth part above. Captain Ross observed multitudes of icebergs in Davis's Strait and Baffin's Bay: at one time, near Waygate, or Hare Island, he s w 700 icebergs, some of them of prodigious size and extraordinary form. One berg is described by Captain Ross as being 40 feet high, and 1000 feet long; another 85 feet high, and 1200 feet in circumference; another 325 feet high, and 1200 feet long: another aground in 150 fathoms water, and several together aground in 250 fathoms; one berg, of which the dimensions were given in by Captain Parry, had nine unequal sides, was aground in 60 fathoms, and measured 4169 yards long, 3669 yards broad, and 51 feet high. The weight of this iceberg, taken at somewhat smaller dimensions, was estimated at 1,292,897,673 tons. One of the largest bergs represented in Captain Ross's *Journal*, is perforated in an arched form, beneath which some of the crew disembarked on the ice.

Floating icebergs are seen in greater number in Baffin's Bay than elsewhere in the Arctic regions. Thence they constantly make their way southward, down Davis's Strait, and are scattered abroad in the Atlantic. They also occasionally crowd the banks of Newfoundland, "beyond which," says Captain Scoresby, "they are sometimes conveyed, by the operation of the southerly under-current, as low as latitude 40° north, and even lower, a distance of at least 2000 miles from the place of their origin."

Icebergs are frequently of fantastic shapes, but their most general form is with one high perpendicular side, the opposite side very low, and the intermediate surface sloping gradually. Some have regular flat surfaces, but they have most commonly different acute summits. Some, as that figured by Captain Ross, are perforated, or contain caverns, or clefts and cracks in the most elevated parts, so as to resemble distinct spires On some bergs there are hollows, or pools, in which snow or water accumulates; others are smooth and naked; their sides being sometimes filled with small holes as regular as if formed by art. The base of floating icebergs is commonly larger in extent than their upper surface.

Hence, (says Scoresby,) the proportion of ice appearing above water, is seldom less in elevation than one-seventh of the whole thickness; and, when the summit is conical, or of the steeple form, the elevation above water is frequently one-fourth of the whole depth of the bergs. The waves break against them in a high sea, and in a swell they make a tremendous noise in rising and falling; and they rip up and divide fields of ice of great thickness. The breaking up of icebergs is usually caused by the heat of the sun, or a temperate atmosphere: they then become hollow and fragile; large pieces break off and fall into the sea with an astounding crash. This is technically termed calving: the iceberg loses its equilibrium, sometimes turns on one side, and occasionally is inverted. The sea is thereby put into commotion; fields of ice in the vicinity are broken up; the waves extend, and the noise is heard to the distance of several miles; and sometimes the rolling motion of the berg not ceasing, other pieces get loosened and detached, until the whole mass falls asunder, like a wreck.

The general colour of icebergs has been referred to; but their appearance varies with their solidity and distance, and their mixture with earth, gravel, or sand. The state of the atmosphere also affects their appearance: they glisten in the sun's rays, and even at night are discernible at a distance, by their natural effulgence; and, in foggy weather, by a peculiar blackness in the atmosphere. Captain Ross tells us that it is hardly possible to imagine anything more exquisite than the variety of tints which icebergs display: by night, as well as by day, they glitter with a vividness of colour beyond the power of art to represent. While the white portions have the brilliancy of silver, their colours are as various and splendid as those of the rainbow. By these means the danger of icebergs to the navigator is much diminished; but it is still requisite to be on the watch for them. They sometimes occur in extensive chains, in which vessels get involved in the night, during storms, when fatal accidents occur. Ships are not unfrequently moored to bergs; but if the latter be overturned, or, while floating in a tide-way, their base be arrested by the ground, they fall with the noise of thunder, and crush whatever objects they encounter in their descent. "Thus have vessels been often staved by the fall of their icy moorings; while smaller objects, such as boats, have been repeatedly overwhelmed, even at a considerable distance, by the vast waves occasioned by such events." Again, in the temperate season, when the bergs become fragile, and are struck for the mooring anchor, they split asunder, and the masses bury boats and men. "The awful effect produced by a solid mass, many thousands, or even millions, of tons in weight, changing its situation with the velocity of a falling body, whereby its aspiring summit is in a moment buried in the ocean, can be more easily imagined than described."

Captain Scoresby concludes that most of the ice-mountains, or icebergs, that occur in the Arctic regions,

are derived from the land icebergs, or glaciers, and are consequently the product of snow or rain-water. The same writer also allows that some icebergs may be formed in coves and bays in the polar countries; and these, having their bed in the ocean, must be partly the product of sea-water, and partly that of snow and rain-water. From the evidence of a Russian voyager of the last century, there is reason to infer that some icebergs have their origin in the wide expanse of the ocean; and he describes a continent, so to speak, of mountainous ice existing, and probably increasing in the ocean, at a distance of between 300 and 400 miles from any known land.

The buoyancy of icebergs is referable to the considerable increase of bulk which water undergoes in congelation; ice being, bulk for bulk, lighter than water. This buoyancy produces remarkable effects, not only floats the icebergs, but with them heavy bodies, as strata of earth and stone, and beds of rock of great thickness, which are thus transported from the mountainous shores of high latitudes to the bottom of distant seas, where the ice is dissolved. Such ice-islands, before they are melted, have been known to drift from Baffin's Bay to the Azores, and from the South Pole to the neighbourhood of the Cape.

Icebergs not unfrequently ground on reefs or shallows, and thus remain stationary for some years. Fabricius and Crautz mention two immense icebergs having grounded and remained in South-east Bay for several years. From their vast size they were named by the Dutch, Amsterdam and Haarlem.

To prolong my days I will neither ask the elixir of life from the alchemist, nor multiplied prescriptions from the physician. A severe regimen tends to abridge life, and multiplied privations give a sadness to the spirit, more noxious than the prescribed remedies are salutary. Besides, what is physical, without moral life; that is to say, without improvement and enjoyment?—FLINT.

CHILDREN AND STORY-TELLERS OF NAPLES.

THE streets of Naples are characterized by extraordinary stir and bustle. One of the most interesting features of this scene is the great number of very young children, who are already of use to their parents. You see little boys and girls as busily employed as their elders; one is the bearer of his father's breakfast to the fields; another carries a pick-axe or spade, which you would hardly think him strong enough to lift. Another drives an ass, with vegetables, to market; and you may often see a little creature standing on a chair, grinding a knife, while another, still younger, turns the wheel.

In the city are *conservatorii*, or schools, opened for children of both sexes, where they are educated, fed, and taught some handicraft. Some are in the nature of workhouses, and employ a multitude of indigent persons, while others are devoted entirely to children, educated principally for music. The latter institutions have produced many of the great performers and masters of the art, who have figured in the churches or on the stages of the different capitals of Europe for the last century.

An amusement almost peculiar to Naples is that afforded by story-tellers, or, as they are called, the *improvisatori*. M. Sass, a recent traveller, says:—"These men are seen surrounded by audiences of the lower classes. They have a square place railed in, with a few planks for seats. Some sit,—others stand,—and numbers lie on the ground; but all evince profound attention. One man relates stories of his own invention, at times convulsing his hearers with laughter, and at others drawing the tears of sensibility from their eyes. Farther on is one who recites from Ariosto, Tasso, or other Italian poets; and often, after reading a passage, he puts the book under his arm, and proceeds to an explanation, with very appropriate action and gesture. The voice and manner of the improvisatore,—the interest excited in the audience,—every one appearing fearful of breathing, lest they should lose a part, or interrupt the story,—the beautiful groups in which they are accidentally ranged, combine to make it a most interesting sight to a stranger."

RURAL SPORTS FOR THE MONTHS.

FEBRUARY.

In vain each earth he tries, the doors are barred
Impregnable, nor is the covert safe;
He pants for purer air. Hark! what loud shouts
Re-echo through the groves! he breaks away;
Shrill horns proclaim his flight. Each straggling hound
Strains o'er the lawn to reach the distant pack:
'Tis triumph all and joy.——SOMERVILLE.

THE COMMON FOX, (*Vulpes vulgaris.*)

THROUGHOUT the habitable regions of the earth, we find that, as the empire of civilized man gradually extends, predatory animals are proportionably reduced in number, until in particular countries or districts the most formidable species become completely extinct. Thus, that ancient marauder the wolf, formerly so much the object of dread and superstition throughout our land, has been extirpated from it, though he is still roaming at large on many parts of the Continent. But while this is the case with such animals as have proved themselves inimical to the safety of the human race, it is not so with the FOX, whose propensities, however rapacious, are exercised only on creatures lower in the scale of existence than itself. This animal is permitted to remain amongst us for the sake of the sport which it affords; its depredations are tolerated, and pains are even taken to keep up the supply of the species.

In no other country of the world is the hunting of the fox pursued with the same zeal and success as in England. It is a favourite diversion with all ranks of people, and is greatly lauded by its advocates as a means of keeping up the hardihood of the English character, as well as of promoting a kindly feeling between the several classes meeting together on such occasions. The breed of horses, it is also said, would soon degenerate, were the stimulus removed which now induces persons to go to the expense, trouble, and risk of rearing horses for the chase. Whether this be the case or not, the enthusiasm with which this sport is followed is very remarkable, and is by no means confined to the actual members of the hunt. It is amusing to witness the excitement which pervades a village in the hunting districts when the inhabitants become aware of the approach of the hounds. Old people seem to regain a portion of their juvenile feelings, and may be seen hastening with unwonted activity to view the sport; labouring men forget their usual measured pace, and appear as if impelled towards the scene of action by some irresistible impulse; others necessarily confined to their tasks, show by their eager looks that they would willingly throw aside the implements of husbandry and join the chase; light and active persons frequently follow the hounds on foot, and traverse the country for miles with a degree of speed and ardour unknown to them at other times; all indeed is bustle and excitement, and ill fares the work, domestic or of the field, when reynard chooses to lead the huntsmen and the hounds in the vicinity of a village.

The pleasurable excitement connected with this diversion is doubtless greatly enhanced by the sagacity and and wiliness of the animal pursued, and by the innumerable stratagems which it employs to elude the menaced ruin. The history of the fox is full of interest, and will repay us for the attention we may be disposed to give to the subject.

The family to which our common fox belongs is generally considered as only a variety of the extensive genus *Canis*, which comprises dogs, wolves, and jackals. Nor is the organisation of the fox very different from that of the dog. The number of toes on the fore and hind-feet, and the number and position of the incisor, canine, and cheek teeth correspond in each, though the teeth of the fox are sharper and better fitted to inflict a mortal wound at a single bite, without mangling its prey, than those of the dog. There are, however, some remarkable differences between the animals, as there are also between the fox, and all other members of the same family. The pupil of the eye in the fox, if observed during the day, or under the influence of a strong light, is seen to close in a vertical direction, instead of contracting equally in the form of a circle, and, therefore, as in the case of the cat, the faculty of vision can be exercised with a very small proportion of light. Yet is the animal by no means deficient in sight, even when exposed to the noontide glare; as those who have followed in his track can abundantly testify. Another point of difference is in the shape of the muzzle, which in the fox is much more elongated and pointed than in others of the same family. The tail is also longer, more bushy, and more thickly covered with fur; the skin is altogether covered with closer and finer fur, and is in some varieties of great beauty and high value.

The habits of the fox are more distinct than its organisation from those of other animals of the canine species. The form of the eye enables it to see prey when above it, and thus the perches of pheasants and other gallinaceous birds are assailed by the nocturnal marauder. Its predacious habits know no bounds, and its stealthy and cautious manner of approaching and of securing its prey enables it to commit the most destructive havoc in the farm-yard, and to carry off its booty with impunity. It is peculiar to foxes to be quite solitary in their operations, never joining in numbers to make common cause against their enemies, and so to compensate for the want of individual strength; but encountering alone whatever dangers assail it, and opposing them at first with all the cunning of its sagacious nature, and when this fails, with the most desperate and unyielding courage, fighting to the last extremity.

Foxes are common in various parts of the globe, but most numerous in temperate and cold climates. There is not much difference in their general aspect, except such as arises from variety in colour and markings. Their means of subsistence vary with the localities in which they are found. In some places they are known to subsist chiefly on fish, in others they fatten on the fruit of the vine; the lesser beasts and birds are, however, their principal prey, especially rabbits, game, and domestic poultry. They perform an essential service in Scotland by destroying the moor mice, which sometimes increase to such an extent as to destroy the vegetation of the moors, to the great loss of the shepherd. At the season of the vintage in France and Italy, these animals do much damage, and feed on the grapes till they become fat, and, as it is said, good for eating. Foxes are not migratory animals in any country, nor do they often shift their quarters with the seasons: they are hardy and healthy creatures, and it is a rare occurrence to find one of their number that has died a natural death.

The common fox is about a foot high, and from the muzzle to the other extremity of the body it averages about two feet and a half. Shaw describes it as having a broad head, sharp snout, flat forehead; and a straight and bushy tail. The colour is a yellowish red or brown, mixed with white or ash-colour on the forehead, shoulders, hind-part of the back, and outside of the hind-legs; the lips, cheeks, and throat are white, and a stripe of the same colour runs along the under side of the legs; the breast and belly are whitish gray; the tips of the ears and the feet black; the tail externally reddish-yellow, with a black tinge; internally yellowish-white, with the same; the tip of the tail perfectly white. According to circumstances the fox kennels either above or below the surface of the earth. Where the soil is wet and clayey, he finds a retreat in thick bushes or in hollows at the roots of trees; in drier situations he makes an excavation to a convenient depth in the earth, often beneath the protection of a high bank where roots of trees, &c. prevent the soil from falling in, and also form a shelter to his dwelling. He does not always take the trouble to make a hole for himself, but gets accommodation by dispossessing the badger. Wherever he takes up his abode he always provides a number of outlets to give means of escape from danger. The young of the fox are from three to eight in number, and are produced only once in the year, *i.e.* about the latter end of March. The female prepares a bed for them of leaves and hay, and manifests the most tender solicitude in their behalf. The cautious, prudent character which belongs to her by nature, seems entirely lost when she has young ones to nurse and protect. If she perceives the place of her retreat to be discovered, she will carry off her cubs one by one, till she has put them all in a situation which promises greater security. She has even been known to bear away a cub when the hounds were out, and thus risk her own life in attempting to save that of her offspring. The cubs are born like dogs, covered with hair, and having their eyes shut. Their growth is completed at eighteen months, and the period of their natural lives is probably thirteen or fourteen years.

In the days of his inexperience (says a modern writer) a favourite lure will ensnare the fox, but when apprised of its nature, the same expedient becomes unavailing. He smells the very iron of the trap, and carefully shuns it. If he perceives that the means of ambush are multiplying around him, he quits his place of residence and retires into more secure quarters. Man with all his reasonings and machines, requires himself much experience not to be overreached by this wily quadruped. If all the issues of the kennel are beset with snares, the occupant scents and recognises them, and rather than fall into them, exposes himself to the most cruel and protracted privation of food. He is comparatively ignorant and careless of his conduct when no war is waged against him; but when the apprehension of pain or death, exhibited under various forms, has produced multiplied sensations, which become fixed in his memory, and give rise to comparisons, judgments, and indications, he acquires skill, penetration, and cunning. If the imprudence and thoughtlessness of youth frequently make him deviate from the right path, the experience of age corrects his wanderings, and teaches him to discriminate true from false appearances.

The skin of the fox we have already spoken of as furnishing a soft and warm fur. This is much used in various parts of Europe, for muffs and for the lining of clothes. In the Valais, and the Alpine districts of Switzerland, great numbers of foxes are taken on this account. Vast numbers of skins are likewise imported from Newfoundland and Hudson's Bay.

In order to keep up the supply of foxes in this country, they are sometimes imported from the Continent, but these are said not to show equal sport with our own. The waste of foxes is not attributed altogether to the hunting which is carried on, but to the prepossession against reynard which exists among the owners of extensive domains, where the preservation of winged game is an object of importance. It is affirmed, however, that if coverts were provided in ground favourable to the burrowing of rabbits, the foxes, who prefer rabbits to any other food, would supply themselves from this source,

without molesting either pheasants, partridges, or hares; and this statement is confirmed by facts, for in some manors, thus provided with the favourite food of the fox, this animal is found with hares and pheasants in equal plenty.

In the night which precedes a fox-hunt the well-known business of earth-stopping is performed by persons connected with the hunting establishment. This consists in stopping up the *earths*, as they are called, while the foxes are absent in search of their prey, so that when they return to their lodging, they find themselves shut out. Thorn or furze-bushes, intermixed with earth, are used to close the entrances to these subterranean dwellings, and when the chase is over, the earths are unstopped, that the foxes may not be deprived of their natural kennel, and driven to seek others elsewhere.

The season of fox-hunting is, or ought to be, now nearly at an end. It has been recommended, as a means of repairing the scarcity of foxes, that no country be hunted later than February. As a further means of supplying the requirements of the chase, the domestic rearing of foxes is frequently resorted to. Some litters are procured, carefully removed, and placed in a convenient apartment, where they are fed, and nourished up with milk, wheat, and water, until they are old enough to try their strength against weasels, polecats, &c. A kennel is then prepared for these young foxes, and they are forced into it, one by one, and kept there by watching and supplying them with sufficient food within the entrance. Where rabbits are plentiful the cubs soon learn to catch the young ones in the neighbourhood: they likewise find plenty of beetles, chaffers, and worms, and if properly managed there is very little doubt of their taking to the kennel and remaining there.

The habits of the fox afford subject for a much longer notice than we can give, but they have been so frequently illustrated by anecdotes, or brought under actual observation, that to a large proportion of our readers they are doubtless sufficiently familiar. While this animal is reared and prized by the huntsman, he is unjustly hated and despised by many persons, in consequence of the natural tendencies which belong to him. We cannot join, for instance, in such language as the following, where the animal is represented as a thief, conscious of the wrong and robbery he is committing, and expecting the just vengeance of his pursuers.

> As straggling armies at the trumpet's voice
> Press to their standard, hither all repair,
> And hurry through the woods, with hasty step,
> Rustling, and full of hope; now driven on heaps
> They push, they strive; while from the kennel sneaks
> The conscious villain. See! he skulks along,
> Sleek at the shepherd's cost, and plump with meals
> Purloined: so thrive the wicked here below!
> Though high his brush he bear; though tipt with white
> It gaily shine, yet e'er the sun declined
> Recal the shades of night, the pampered rogue
> Shall rue his fate reversed, and at his heels
> Behold the just avenger, swift to seize
> His forfeit head, and thirsting for his blood.
>
> SOMERVILLE'S *Chase*.

IF there were no other sign of the perverseness of the mind of man, this would be a sufficient one, that about spiritual things almost every one is satisfied with himself, and thinks himself as wise and as holy as need is, whereas about temporal things nobody is contented with his state and condition, but would fain be greater and richer every day. If we were really wise we should not be so greedy of temporal things, considering we have as much as nature requires. What is beyond the need of nature is a clog to grace. But in spiritual things the greatest share we have is the least of what an Infinite Being is able and willing to give.—LUDOLF.

ON CHESS.

V.

ORIGIN OF THE NAMES OF CHESS-MEN.

AN inquiry into the various mutations which the game of chess has undergone in its passage through different nations, affords much curious information. Although the nature of the game itself never seems to have been essentially changed, yet the names and powers of the pieces have been subject to much variation: the military character of the game has often been lost sight of; and it may, in its present state, be typical not so much of a military community as of a well-regulated society, in which we find kings, queens, bishops, knights, and peasants.

The king, the principal piece in the game, has always preserved his title; but his consort, the queen, has been raised to her present dignity by a series of remarkable changes, which can be traced with tolerable exactness. The original name for this piece seems to have been the Eastern word *Pherz*, that is, a counsellor, or general of an army. It has been supposed that the similarity of sound between the words *Pherz* and *Vierge*, occasioned the introduction of the latter term among the Europeans: but that the extravagant veneration of the times towards the Holy Virgin, caused the term *Vierge* to be changed into *Fierce* or *Fers*, the old Norman and English term for the queen, and thus the military character of the game became at once lost sight of. In an old Latin poem the queen is called *Virgo*.

M. Freret, after remarking that among Eastern nations the move of this piece is only from square to square, observes, that the romantic spirit of the times disdained this very contracted motion as too much resembling the slavery of the Asiatic females, and contrary to the privileges enjoyed by those in Europe, on which account they rendered it as free as possible, by making it the most important of all the pieces. But this remark does not agree with Mr. Barrington's ingenious observations. He says:—

> In most of these (the Eastern) governments, the kings are rather indolent monarchs, and consequently this piece scarcely moves at all, but is merely to be defended from attacks. The emperor himself being thus indolent, necessarily requires a minister or general, who can protect his master by vigorous and extensive motions against distant insults, in the most remote parts of the board. The piece therefore of the greatest importance, was by the Persians styled *Pherz* or *General*. Chess hath universally been considered as an engagement between two armies, and if the piece of the greatest importance is termed the *General*, this allusion is properly carried on.

Mr. Douce remarks:—

> Although the title of *queen* cannot be traced so far back as that of *fierce*, it is of considerable antiquity, as it is to be met with in French manuscripts of the thirteenth century; and in the *Gesta Romanorum*, a collection of stories compiled about the beginning of the thirteenth century, this piece is called *regina*.

About the year 1408, John Lydgate, the monk of St. Edmonsbury, wrote a poem which he dedicated to the admirers of the game royal at chess, from which the following extract is preserved by Dr. Hyde:—

> To all folkys vertuouse
> That gentil bene, and amerouse,
> Which love the fair pley notable,
> Of the chesse, most delytable,
> Whith all her hoole full entente,
> To them this boke y will presente;
> Where they shall fynde and son anoone
> How that I nat yore agoone,
> Was of a Fers so fortunat,
> Into a corner drive and Maat.

The last two lines become intelligible if we read them thus, "The king was by a fortunate queen (of the adversary,) driven into a corner of the chess-board and check-mated." We introduce the quotation however to

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show that Mr. Douce is not correct in supposing it "not possible to trace the term *fers* in the English language beyond the time of Chaucer*." But the term *queen* seems to have come into general use by the year 1474, when Caxton printed the second edition of his *Book on Chess*, for he describes the queen in the following terms:—"Thus ought the quene be maad. She ought to be a fayr lady, sittyng in a chayer, and crowned with a corone on her head, and cladde with a cloth of gold, and above furrid with ermynes." We also find the same term continued in the reign of Henry the Seventh, as appears from a passage in the *Vulgaria* of W. Horman, printed at London, 1519. "We shoulde have II kyngis, and II quyens, IIII alfyns, IIII knyghtis, IIII rokis, and XVI paunys."

Mr. Madden thinks that from the pieces found in the Isle of Lewis†, and also by the set of chess-men belonging to Charlemagne, of the eighth, or beginning of the ninth, century, the very early appearance of the queen on the European chess-boards is proved, and consequently we must reject the theory which ascribes this introduction to the French, from the fancied similarity between Fierce, or Fers, and the Persian Pherz. That it is to the Greeks we should rather "ascribe the merit or blame of metamorphosing the minister into the queen, and, by that means, of introducing so strange an anomaly as the promotion of a foot-soldier to be a lady." Mr. Barrington also observes, "Another impropriety arises from the *pawn's* becoming a *queen*, when he hath reached the last square of the adversary's camp; as it is a suitable reward to the *pawn* (or foot-soldier) to make him a general, if he penetrates so far through the enemy's troops; but certainly no prowess on his part can entitle him to be transformed into a queen."

Dr. Hyde states, that in Poland and Russia the chess-queen is sometimes called the *old woman*, or *nurse*.

The Bishop. Among the Persians and Arabs, the original name of this piece was *Pil*, or *Phil*, an elephant; under which form it was represented on the eastern chess-board. It appears that the Spaniards borrowed the term from the Moors, and with the addition of the article *al*, converted it into *alfil*, whence it became varied by Italian, French, and English writers into *arfil*, *alferez*, *alphilus*, *alfino*, *alphino*, *alfiere*, *aufin*, *alfyn*, *awfyn*, and *alphyn*. It is quite uncertain at what period the bishop first took the place of the elephant. Mr. Madden brings together a number of authorities to show that the term bishop was in use so early as the eleventh or twelfth century. It was in common use in the time of Elizabeth, as appears from Rowbotham's *Pleasaunt and wittie Playe of the Cheasts renewed*, 12mo, London, 1562. He says of it, "The Bishoppes some name Alphins, some fooles, and some name them princes: other some call them Archers, and thei are fashioned accordinge to the wyll of the workemen:" and again, *Of the bishop, or archer:* "In the auncient tyme of the Frenchmen named him Foole, which seemeth vnto me an improper name. The Spaniardes named him Prince, with some reason; and some name him Archer;" and, of its form among the English, he tells us, "The Bishoppe is made with a sharpe toppe, and cloven in the middest, not muche vnlyke to a bishop's myter."

The French, at a very early period, called this piece *Fol*, an evident corruption of *Fil*. Hence, also, the French name for the piece Fou, or the fool, a natural perversion of the original, when we consider that, at the time it was made, the court fool was a usual attendant on the king and Queen: or, as Mr. Barrington observes, "This piece, standing on the sides of the king and queen, some wag of the times, from this circumstance, styled it *The Fool*, because anciently royal personages were commonly thus attended, from want of other means of amusing themselves."

It is difficult to say why this piece should have been named the archer, unless, as Mr. Douce remarks, "Archers were formerly the body-guards of monarchs, and might have been thought, by some, more proper personages in the game of chess than fools, especially if they were inclined to give it a military turn." This piece has also been called the *Secretary*. The Russians and Swedes retain the original appellation of Elephant; the Germans call it Läufer, or the Leaper, from the ancient mode of taking over an intervening piece; and the Poles call it Pôp, Papa, or Priest. The Icelanders and Danes appear always to have called it Biskup, or Bishop.

The Knight. This piece has been subject to little or no variation. It is likely that in early times the knight was represented on horseback, and hence the piece has often been called *the Horse*. On the European board this piece denoted the nobility; but Dr. Hyde states, that among Charlemagne's chess-men it is represented under the form of a centaur. From the peculiar leap of this piece the Germans call it the *Springer:* the Russians continue to call it the *Horse*.

Religion is the key-stone of the arch of the moral universe. On religion are founded those sublime relations which exist between the visible and the invisible world,—those who still sojourn here, and those who have become citizens of the country beyond us. It is the poesy of existence,—the basis of all high thought and virtuous feeling, of charities and morals,—and the very tie of social existence.—F.

All the generous and tender affections acquire a new charm in alliance with religious ideas, in the same manner as objects, beautiful in themselves, receive a new lustre when a pure light is thrown upon them. Filial piety becomes more touching in those children who pray with fervour for the preservation of the life of a mother; and let a pious courage but guide the visitor of the sick, and he becomes the angel of consolation, as he visits the abodes of misery. Even virtue itself does not receive its celestial impress, except in alliance with religious sentiments.—F.

FAITH AND HOPE.

O Thou! who for our fallen race
Didst lay thy crown of glory by,
And quit thy heavenly dwelling-place,
To clothe Thee in mortality;
By whom our vesture of decay,
Its frailty and its pains were worn;
Who, sinless, of our sinful clay
The burdens and the griefs hast borne;
Who, stainless, bore our guilty doom,
Upon the cross to save us bled,
And who, triumphant from the tomb,
Captivity hast captive led,—
Oh! teach thy ransomed ones to know
Thy love who diedst to set them free;
And bid their torpid spirit glow
With love, which centres all in Thee;
And come, triumphant Victim! come,
I' the brightness of thy holy love,
And make this earth our purchased home,
The image of thy courts above.
Dimly, O Lord! our feeble eyes
The dawning rays of glory see;
But brightly shall the morning rise
Which bids creation bend to Thee.
Rise, Sun of Righteousness! and shed
Thy beams of scorching light abroad;
That earth may know (her darkness fled)
Her King in Thee, Incarnate God!
And oh! while yet thy mercy speaks,
So may the words of love prevail,
That when the morn of Judgment breaks,
Many may thine appearing hail.

Lady Flora Hastings.

*Chaucer thus introduces the piece in question:

She stale on me and toke my feers,
And when I sawe my feers away,
Alas, I couthe no lenger play!

†. See *Saturday Magazine*, vol. xviii., p. 37, 60.

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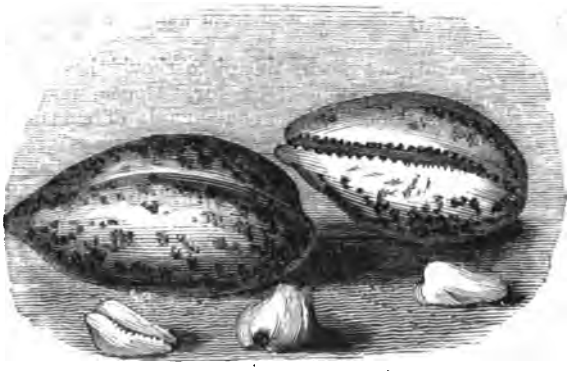
COWRIES.



WHAT can be more wonderful than to view nature in all her irregularities and sports, in her variety of shells; such a difference of colour and figure do they form,—flat, concave, long, lunated, drawn round in a circle, the orbit cut in two; some are seen with a rising on the back, some smooth, some wrinkled, toothed, striated, the point variously intorted, the mouth pointed like a dagger, folded back, bent inwards! All these creatures, and many more, furnish at once novelty, elegance, and speculation. While I thus contemplated nature she wrought in me a persuasion that I should look upon nothing as incredible that related to her.—PLINY.

THE great abundance of these very beautiful shells has rendered them less esteemed than they deserve to be, and has led us to pass them by for the more rare, but not less remarkable, specimens of our cabinets. The family of molluscs, to which cowries, belong is calledby conchologists *Cypræidæ*, and is well known in commerce from one of the species being used in many parts of the East instead of money. Cowries abound in several parts of the Old and New World, but are most numerous, and attain the greatest size, in hot climates. They are especially abundant in the islands of the Indian Archipelago, and are fished for by a curious process of which we shall presently speak.

Situated directly in the route of ships coming from Europe and bound for Ceylon, is an extensive coral chain of innumerable isles and reefs, extending from north to south for a distance of 466 geographical miles, though in breadth it is not thought to exceed, in any part, 48 miles. This remarkable barrier of isles, which spreads out over so large an extent of the western face of India and Ceylon, was one of the earliest discoveries of the Portuguese in the Eastern seas, and considering the situation it occupies, and the dangers to which it exposes those who navigate in its vicinity, has been singularly little known and explored until within a short period.

These islands are called the *Maldivas*, or *Maldives*, the word *mal* in the Malabar language signifying a thousand, or an uncountable number, and *diva*, an island. John de Barros tells us, that although there are openings in this group, from five to twenty leagues wide, yet in other places it is so crowded as to give the idea of a half-drowned orchard, the depth of the water in the intervals being, however, sufficient for the largest vessel, while the space in them is not sufficient for her yards and sails.

The productions of the Maldive Islands are minutely enumerated by the above author, and among them he mentions cowry shells as being very abundant and beautiful. Indeed, the particular kind of shells used as money are chiefly found among these islands, and constitute their principal article of export. They are also found in the Philippine Islands, and on the coast of Congo. The method of fishing for cowry shells is as follows. The branches and leaves of the cocoa-nut (also abundant in these islands), are lashed together in bundles about the size of a wheat-sheaf, two of which constitute what is called a *balsa*, or float. On these balsas the natives take a number of trot lines, with short threads attached to them at every five or six inches, to each of which a bit of meat is firmly tied as a bait. The shell-fish, both cowries and other valuable sea species, swallow these baits, knot and all, and are hauled up by the trot-line till the balsas have a sufficient load, when they are paddled on shore, and the shells buried in the earth till the decomposition of the fish within them is completed. They are then thoroughly washed, and are fit for exportation. Another method is spoken of by some authors, as that by which cowries are obtained. The fishing for them is said to be the occupation of women, after the period of the high tides, who take them in baskets, together with a quantity of sand, which is washed out, and the shells heaped together on the shores until the fish die. Both methods are probably pursued as occasion offers.

The value of cowries as currency varies in different countries. On the coast of Africa, and along the banks of the Niger, they are worth from fifty to sixty pounds a ton, and in the vicinity of the river just named they form the only currency. In England the value of cowries is about twenty pounds the ton.

The natural history of the cowry is rendered interesting by the manner in which the shell is formed, and the power possessed by the fish of quitting its habitation whenever it becomes inconvenient, and of forming a new dwelling of more capacious dimensions. Besides the organs belonging to other animals with univalve shells, the cowry has two wide, membraneous appendages at the sides of the body, with which it can completely cover itself, and which contribute greatly towards the formation of the shell. The very thin and brittle substance which constitutes the inferior part of the shell, is, like other shells, the result of a secretion from the body of the animal; but there is a distinct operation by which the exterior layers of enamel are formed, and this is by the use of the appendages or wings. In the first stages of their growth cowries are thin and transparent, but they gradually acquire solidity by means of the external layers of enamel which the animal successively applies. These layers appear to be a translation from the wings, and have such markings as clearly to show, on the convex surface of the shell, the manner in which they are formed. The longitudinal line, which divides the shell into two unequal parts, is made by the junction of what we have called, for want of a better term, the wings of the animal, and plainly indicates, by the faintness of the tint, that the colouring juice was deficient in that part.

The most singular part of this animal's history, however, is its ability to quit the shell at any time when it is found desirable to do so, and to form another better suited to its increasing size. Even while the animal is forming its shell for the first time, its own growth makes the labour almost a vain one, for by the time the shell is finished, as it admits of no subsequent enlargement, it is scarcely fitted for the bulk of its occupant, and is therefore soon deserted. As the body of the animal is of a consistence between the tendinous and the mucilaginous, it is probably no difficult operation to disengage itself from the shell. This being effected, the tender creature is immediately exposed naked and defenceless to the action of the saline element by which it is surrounded. But the hinder parts of the body soon begin again to furnish their testaceous matter, which concretes upon the surface, and at length the shell appears of the consistence of paper, and the mouth, which at that time is very wide, soon contracts to its proper shape. The teeth which are seen at the edge of the mouth, together with the beautiful enamel forming the opaque and highly polished surface, are alike produced from and by the action of the wing-like appendages; the spots which adorn this enamel in the full-grown specimens. make the different species of cowry the more easily distinguishable from each other.

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THE

Saturday Magazine.

No. 556. SUPPLEMENT, FEBRUARY, 1841. {PRICE ONE PENNY.

SOME ACCOUNT OF COINS, ANCIENT AND MODERN.

MEDALLION COMMEMORATING THE VICTORY OF HERCULES OVER THE HARPIES.
(From the Earl of Pembroke's Collection.)

THE Medal, faithful to its charge of fame,
Through climes and ages, bears each form and name;
In one short view subjected to our eye,
Gods, Emperors, Heroes, Sages, Beauties lie.—POPE

INTRODUCTION.

A PROLONGED attention to the study of antiquarian objects generally affords a theme for laughter and derision, to those who expect palpably beneficial results from every intellectual exertion. A long-continued study of one object or set of objects prejudices the mind in favour of it, causes the student to speak with enthusiam on his favourite subject, and disposes him to undervalue other mental employments. Hence, the popular estimate of the value of a pursuit being often founded on the exhibition of excess on the part of its votaries, is naturally mixed up with ridicule; and no subject perhaps is so open to the attacks of the satirist as antiquities:—their real value can only be appreciated by considerable study; and as they do not appear to offer any immediate relation to the happiness or convenience of mankind, they are disregarded: but the historian, the architect, the artist, the man of literature, and the man of taste, all derive inestimable advantages from the records of past ages; and, by a faithful interpretation of them, these advantages are given to the world: so that our conduct for the future may be to a certain extent guided by the experience of the past.

We have thought it necessary to preface our account of ANCIENT AND MODERN COINS with this apology, in order to predispose the Reader in favour of a really useful subject. In our motto, the Poet expresses, in his usual concise language, some of the uses of coins; we shall endeavour to avoid the abuse of them which called forth the censure from the same satiric pen:—

With sharpened sight pale antiquaries pore,
The inscription value, but the rust adore:
This, the blue varnish, that, the green endears,
The sacred rust of twice ten hundred years.
To gain Pescennius one employs his schemes;
One grasps a Cecrops in ecstatic dreams;
Poor Vadius, long with learned spleen devoured,
Can taste no pleasure since his shield was scoured.

When a person is looking over a collection of coins, he frequently expresses surprise at their comparative values, which, judging from his every day use of money, appear often to have no sort of relation to the modern system of exchanges:—a silver coin is often of more value than one of gold; and a brass coin fetches perhaps a higher price than either. The difficulty, however, disappears as soon as we begin to look upon a cabinet of medals, not as a treasure of money, but one of knowledge; and not for charms in the gold, but in the figures and inscriptions which adorn it. Thus, Addison well remarks:—"The intrinsic value of an old coin does not consist in its metal, but in its erudition; it is the device that has raised the species; so that at present an *as* or an *obolus* may carry a higher price than a *denarius* or a *drachma:* and a piece of money that was not worth a penny fifteen hundred years ago, may be now rated at fifty crowns, or perhaps a hundred guineas."

So anxious have many antiquarian writers been, to state in the fullest possible terms the usefulness of the study of ancient coins, that it becomes a matter of some difficulty to select those more obvious aids to history and art, which this study has supplied. Addison, however, in his pleasant dialogue on the subject makes one of his characters express himself in terms sufficiently concise for quotation; so that we select the passage. The uses of old coins are inquired after; when Philander says:—"The first and most obvious one, is the showing us the faces of all the great persons of antiquity. A cabinet of medals is a collection of pictures in miniature. Juvenal calls them very humorously

Concisum argentum in titulos, faciesque minutas*.

"You here see the Alexanders, Cæsars, Pompeys, Trajans, and the whole catalogue of heroes; who have many of them so distinguished themselves from the rest of mankind, that we almost look upon them as another species. It is an agreeable amusement to compare in our own thoughts the face of a great man with the character that authors have given us of him, and to try if we can find out in his looks and features either the haughty, cruel, or merciful temper, that discovers itself in the history of his actions. We find, too, on medals the representations of ladies that have given occasion to whole volumes, on account only of a face. We have here the pleasure to examine their looks and dresses, and survey

* Silver stamped with titles and miniature portraits.

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at leisure those beauties that have sometimes been the happiness, or the misery, of whole kingdoms. Nor do you only meet the faces of such as are famous in history, but of several whose names are not to be found anywhere except on medals. Some of the emperors, for example, have had wives, and some of them children, that no authors have mentioned. We are, therefore, obliged to the study of coins for having made new discoveries to the learned, and given them information of such persons as are to be met with on no other kind of records." . . . "You have on medals a long list of heathen deities, distinguished from each other by their proper titles and ornaments. You see the copies of the several statues, that have had the politest nations of the world fall down before them. You have here, too, several persons of a more thin and shadowy nature, as Hope, Constancy, Fidelity, Abundance, Honour, Virtue, Eternity, Justice, Moderation, Happiness,—and in short, a whole creation of the like imaginary substances. To these you may add the genies of nations, provinces, cities, highways, and the like allegorical beings. In devices of this nature one sees a pretty poetical invention, and may often find as much thought on the reverse of a medal, as in a canto of Spenser."

Another author* has well observed,—"From the same source we derive a knowledge of many customs of a more private nature: of the ceremonies which accompanied their marriages and funerals: of the various sacrifices which they performed in privacy and retirement: a sort of information which deserves all the attention the antiquarian can bestow upon it: for while the greater and more public customs give the general outline of a people, these point out many nicer features in their character, represent their particular inclinations and favourite pursuits, and transport us into the most delightful scenes of domestic life.

"There cannot, perhaps, be a more certain test of the real state of perfection, to which the fine arts in general have advanced in any country, than the beauty of their medals. The unrivalled elegance of the Greek medals, the propriety of their design, and the spirit of their execution, are sufficient to convince us that, amongst a people who could produce such perfect models in a particular art, every other ornamental art must have flourished in the highest splendour: nor shall we hesitate to pronounce, upon comparing the medals of Rome with those of her provinces that the arts of the capital had not extended their influence to every part of that vast empire.

"The medals of the Greek cities preserve some faint traces of Grecian jurisprudence as well in the public decrees and conventions, as in the private ordinances which they record. To the civil institutes of the Romans their medals are the most certain guides: for every law which the interest of private families procured for the people, for every decree of an emperor, which was calculated to promote the welfare of the empire, the senate adopted this as the best mode of expressing their gratitude, and delivering the remembrance of it to future ages. The study of the civil law, therefore, has always been found to have a great connection with the study of medals, and to receive illustration from them in many of its most abstruse parts."

SECTION I.

MEDALS AND COINS DISTINGUISHED—METALS OF WHICH THEY ARE MADE—PECULIARITIES OF COINING—SIZES—PARTS OF A MEDAL—SUBJECTS OF MEDALS—PORTRAITS—REVERSES OF MEDALS—REMARKABLE COINS—TITLES ON COINS AND MEDALS.

By the term *medal* we are to understand a piece of metal in form of a *coin*, designed to preserve to posterity the portrait of some great man, or the memory of some illustrious action. Coins, in the ordinary intercourse of life, serve the purposes of exchange, and are the representatives of value. When they cease to serve this office, and are still treasured up, they come under the denomination of *medals;* so that, in this paper, the two terms, Coins and Medals, will be treated of synonymously, unless otherwise specified.

The metals of which medals and coins have been in all times ordinarily made, are gold, silver, and copper: under this last head, are included all the *brass* coins which have come down to our times, as well as those of copper. Other substances have been used by different nations, for money; such as leather, wood, shells, beads, &c., but with these we have nothing to do.

In order to estimate the fineness and purity of gold, the pound Troy is considered to be divided into twenty-four parts, called *carats*, and each carat into four *grains*.

The most ancient gold coins, which are those of Lydia, and other states in Asia Minor, are not of the purest gold. Some of the very ancient coins are formed of a compound of gold and silver, called *electrum;* one part gold, and four silver. But very fine gold coins began to be formed B.C. 350, by Philip, King of Macedon; from the gold obtained from the mines of Philippi, in Thrace. The coins of Alexander and of succeeding princes are also beautiful specimens of ancient coining; those of the Ptolemies of Egypt are twenty-three carats, three grains fine; or only $\frac{1}{32}$ part alloy! The Roman gold coinage is very pure from the earliest times, and continued so till the reign of Severus, A.D. 211. The proportion of alloy, that is, an inferior metal, such as copper, mixed with the gold, in order to harden it, was various in different countries, and has varied much in different ages: but in general, the ancient gold coins had not more than $\frac{1}{12}$ part alloy. The Romans, however, in the later ages first began to considerably debase the precious metals.

The most ancient silver was also less pure than that of succeeding times, and particularly so with the Greeks. The Roman silver was likewise inferior to ours; and very bad silver began to be put out in the reign of Severus. It is thought that the silver coins of Ægina, having on one side a turtle, or tortoise, and showing the rude marks of the coiner's blows on the other, are the most ancient known.

The brass of the ancients, when good, which is rather uncommon, consisted of two sorts; the red, or what they called *Cyprian* brass,—*i.e.* copper; and the yellow, or brass. With the Romans, brass was double the value of copper; and the Greeks probably followed the same rule.

The ancients had also numerous coins made of mixed metals. The first sort was that of the *electrum*, just mentioned. The next were those of *Corinthian* brass, which depended upon certain qualities or proportions in which the copper and zinc were mingled to produce the brass. Of Egyptian coins struck under the Roman emperors, some were at first of good silver; but by degrees they degenerated into a metal called by the French *potin*,—a mixture of copper and tin with a little silver. Some coins were made of what is now called *pot-metal*, or *bell-metal*. A coinage of brass mixed with silver was authorised by the Roman state about A.D. 260. The coins spoken of by some writers, of lead or copper, plated with gold or silver, are supposed to have resulted from Roman forgery; but leaden coins have been found of undoubted antiquity. An ancient writer informs us that *tin* money was issued by Dionysius, one of the Sicilian tyrants; but no such coins have been discovered, though medals of lead have been found of the imperial sort; but these are chiefly trial-pieces, to enable the artist to judge of the progress of the die. Lastly, some medals were composed of two different metals, not by melting them together, but either by plating over brass or iron with silver, or by laying a rim of a different metal round the edge of a medal: the former was a sort of false money, which had its origin during the triumvirate of Augustus.

None of the ancient money was cast in moulds, except the most ancient and very large Roman brass, commonly called *weights;* neither did the ancients impress legends on the edges of their money, as often done on modern coins, particularly on the crown and half-crown pieces of the last century; but some of their pieces are found *crenated, i.e.* notched round the edges. This is the case with some of the Syrian coins, with some of the Roman consular, and a few other early ones: the chief object of it was to prevent forgery.

Medals may likewise be distinguished by their *sizes*. The sizes of ancient medals are from three inches to a quarter of an inch in diameter. Those of the largest size are commonly called *medallions*. The others are usually ranked into *large*, *middle*, and *small;* and the class is determined not so much by the breadth and thickness of the medal itself, as by the size of the head that is stamped upon it. The shape of medals is rather elliptical, or not perfectly round. The first regular Greek coins were small pieces of silver, while the Roman were large masses of copper: the former were struck, the latter cast in moulds. The frontispiece shows a medallion belonging to the heavy brass species. It cannot be later than the time of Servius Tullius, who governed Rome about 550 B.C. This king coined nothing but brass. The piece in question is of the actual size represented in our cut, and weighs nineteen ounces and three quarters. It was probably cast in a mould.

The subject of it is Hercules and the Harpy. This

* Hall, *Oxford Prize Essay on Medals.*

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hero is held out by the ancients as a true pattern of virtue and piety; and as his whole life was employed for the common benefit of mankind, we need not be surprised that his effigy should be found upon coins and medals. He seems to have flourished about 1230 years B.C. The twelve labours of Hercules are well known in Profane History. His sixth labour seems to have consisted in ridding the neighbourhood of the lake Stymphalus, in Arcadia, where was a town of the same name, of a number of voracious birds, like cranes or storks, which fed upon human flesh. The poets frequently represent them as winged monsters, having the face of a woman, with the body of a vulture, and their feet and fingers armed with sharp claws.

The medallion at the head of our paper is evidently intended to commemorate the victory of Hercules over these beings. On the one side is Hercules clothed (as usual) with the skin of the Nemæan lion,—the result of his first labour. On the other side is a Harpy. It has been well remarked that Harpies are for the most part badly represented by the similitude of cherubs, with a full and young human face. According to Collins's *Dictionary*, "they are feigned to be fowls with a virgin's face, and bear's ears, their bodies like vultures, and their hands like their crooked talons." Our medallion marks the harpy as a *fowl;*—it gives the beak of the *vulture*—the *human* eye—the ears of the *bear*—and on the breast, the shaggy *feathering* of the large bird. The picked points upon the nape of the neck seem to denote somewhat of a low-seated crest*.

The *parts* of a medal are the two sides, of which one is called the *face, head,* or *obverse;* the other is termed the *reverse.* On each side is the *area,* or *field,* which is the middle of a medal; the *rim,* or *border;* and the *exergue,* which is beneath the ground whereon the figures represented are placed. On each of the two sides are distinguished the *type,* and the *legend* or *inscription.* The type, or *device,* is the figure represented; the legend is the writing, especially that around the medal; though in the Greek medals this writing is frequently in the area, and is called the *inscription.*

That which is in the exergue is often no more than some initial letters, the meaning of which is not always very plain: but it most usually contains either the date of the coin, *i.e.,* in what consulship of the emperor it was struck, if a Roman coin, and sometimes it signifies the place where it was struck, and to which the coin properly belonged; at other times, perhaps the name of a province is impressed, the reduction of which the medal is designed to celebrate.

On the faces of medals are commonly the portraits of great and illustrious persons; usually, but not always in profile. The coins of the Macedonian kings are the most ancient of any yet known, on which portraits are found; and Alexander I., who lived about 480 B.C., is the earliest monarch whose medals have been discovered. Then follow the kings and queens who reigned in Cyprus, Sicily, &c.; then the series of the kings of Egypt, Syria, &c., which extends from the time of Alexander the Great to the birth of Christ, including a period of about 330 years. The last series of ancient kings descends to the fourth century of the Christian era. The portraits on all these series of medals are accompanied with Greek writing.

There is a very perfect series of medals of the Roman emperors from Julius Cæsar, the first, to the destruction of Rome by the Goths; or even to a much later period, if the coins after this were not so rude as to destroy the beauty of the series, though they enhance its completeness. Till the third century after Christ, the faces on Roman medals were represented in profile. After this, for some time, we see Gothic front faces filling the whole field of medals.

The kings upon Greek coins have generally the diadem without any other ornament. The side face is always presented; though upon very ancient Greek coins of cities, and Roman consular coins, full faces are found of amazing relief and expression. Sometimes several heads are found on the same coin, either impressed on both sides, or only upon one. Sometimes two or more heads are found upon one side, while the other bears a reverse in the usual way: such heads are either *adverse,* that is, opposite to each other, face to face; or *joined,* both looking one way: of this latter sort are some of the finest Greek coins. Real portraits are sometimes found joined with ideal ones: such as, Carausius and Apollo, Posthumus and Hercules; Carausius and Posthumus being names of living characters, the others of fabulous deities. Three heads are occasionally found on one side; but all such coins are very rare and valuable.

The chief ornament of medallic portraits is the diadem, called in Latin *vitta.* This was a riband worn about the head, and tied in a flowing knot behind; in ancient times the simple but expressive badge of regal power. It appears on the Greek medals of kings, from the earliest to the latest ages, and is a decided sign of the portrait of a prince. It occurs likewise, but seldom, on some Roman consular coins. The Romans having for ages an utter abhorrence of any thing which savoured of kingly distinction, their emperors ventured not for two centuries to assume the diadem, though they wore the radiated crown peculiar to the gods. But, in the time of Constantine, about A.D. 310, the diadem began to be worn, ornamented on either side with a row of pearls and various other decorations. The radiated crown

COIN OF ANTIOCHUS VI.

was first used as a token of deification in the posthumous coins of an emperor; but was soon put upon the emperors' heads, on their medals, during their life-time. The crown of laurel, the honourable distinction of conquerors, was afterwards worn, at least on the medals, by all the Roman emperors from Julius Cæsar. In later times, the laurel is held by a hand above the head, as a mark of piety. Besides the diadem, the Greek princes sometimes appear with the laurel crown. The Arsacidæ, or kings of Parthia, wear a kind of sash round the head, with their hair in rows of curls like a wig. Tigranes, and the kings of Armenia, wear the tiara. The successors of Alexander the Great assumed different symbols of deity on the busts of their medals. The helmet also appears on coins, as on those of Macedon under the Romans, which have Alexander's head sometimes covered with a helmet. It occurs also on some of the coins of Probus and Constantine: as also on a coin of Herod, king of Judæa, which circumstance was considered as a mark of his pride and ambition.

JEWISH COIN.

The diadem also adorns the heads of the Greek queens. The queens of Egypt usually have the sceptre. The Roman empresses never appear with the diadem, the variety of their head-dresses compensating for the want of it; the minutest parts of which are often remarkable on their coins. The bust of an empress is sometimes supported by a crescent, which probably denoted that she was the moon as her husband was the sun, of the state. There are other symbolic ornaments of the head to be seen on some Roman coins; the principal of which is the *veil* used in the consecration of an emperor or empress: such coins are valuable for their rarity.

MEDAL OF NERO.

* We are indebted for this explanation to the Rev. E. Duke, of Lake House, near Salisbury, an eminent local antiquary.

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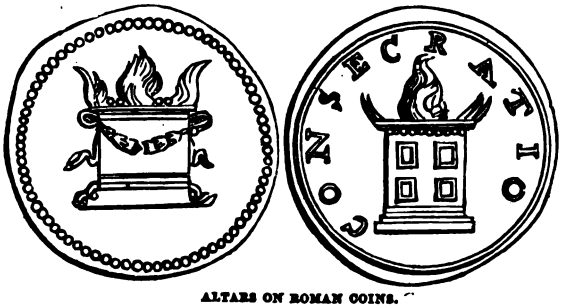
: The "glory," or circular line, in later times usually put upon the heads of saints, was in old times applied to emperors, and appears on some of their coins. The bust of a figure is the only part usually given on ancient coins; but sometimes half, or the whole, of the body; in which cases, the hands appear with some ensigns of majesty in them: such as the globe, said to have been introduced by Augustus, as expressing possession of the world; the sceptre, sometimes confounded with the consular staff; the roll of parchment, indicating legislative power; and the handkerchief, with which the emperor gave the signal at the public games. Some princes hold the thunderbolt, shewing that their power on earth was equal to that of Jupiter in heaven; others hold an image of Victory.

The reverses of medals contain figures of deities, at whole length, with their attributes and symbols; public buildings and diversions; allegorical representations; civil and religious ceremonies; important events; figures of statues; plants,



ALTARS ON ROMAN COINS.

animals, and other subjects of Natural History; magistrates with their insignia; and, in short, almost every object of nature and art. Some reverses bear the portrait of the queen, the son, or the daughter of the prince who appears on the obverse: such coins are particularly valuable, because they identify the personage on the reverse to have been the wife, son, or daughter, of a particular prince, and thus help to adjust a series. Some medals have a portrait on each side.

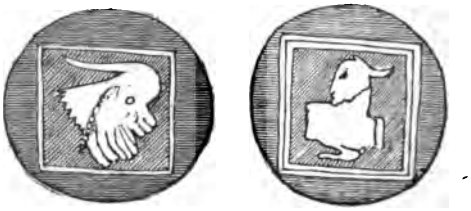
The ancient Athenian coins are remarkable for the coarseness of their engraving, and the figure of the owl on the reverse. The reverses of Roman coins have more art and design about them than the Greek; but those of the Greeks excel in relief and workmanship. In the most ancient coins no reverse is found, except a rude mark struck into the metal, as of an instrument with four blunt points, on which the coin was struck. Soon after, by degrees, there appears some little form of a dolphin, or other animal, inserted, within the rude mark, or in a hollow square. Next follows, perhaps, a perfect reverse of a horse, or the like, and all the rude marks gradually disappear. Some of the Greek reverses are *in intaglio*, that is, sunk; not *in cameo*, that is, raised, or in relief. When complete reverses appear on the Greek coins, about 500 B.C., they are of exquisite relief, minute finish, and beauty. The very muscles of men and animals are seen, and will bear inspection with the largest magnifying glass.

The subject of the reverses of Roman coins till about the year 100 B.C. was the prow of a ship, a car, or such like; but about this time various devices appear on their consular coins in all metals. The variety and beauty of the imperial Roman reverses are well known. Such as have a large number of figures within the area of the reverse, are much valued: there is a small gold coin, no larger than a sixpence, containing on the reverse the "Daughters of Faustina,"—twelve figures! There are others of a similar sort. Some also have small figures on both sides.

The figures of gods and goddesses on Roman coins, usually have their names, as well as their peculiar attributes; the names serving as a legend, when coupled with some expressive adjective, declaring the office or quality of the deity represented: but in the Greek coins, the name of the deity is not expressed, but left to the easy interpretation of fixed symbols. This remarkable difference is observable in the earliest coins of the two countries, on which only the bust of the deity is given. The Romans have almost always the name; while the Greeks are satisfied with affording to each deity its distinguishing symbol.

We now proceed to give an account of the symbols found on two remarkable coins, which are not immediately illustrated by a legend.

In the reign of Archelaus, King of Macedon, B.C. 340, there occurs on the reverse of a coin of that king, the head of a goat, having only one horn. We have given two varieties of this coin. This sort of coins, having the square



MACEDONIAN COINS

spoken of before, is ancient; and containing the one-horned goat referred to in the Sacred Book of Daniel, which goat seems to have been a kind of crest of the Grecian king, wonderfully corroborates the course of Scripture prophecy.

The titles that are found on the *faces* of medals are usually titles of honour; as *Imperator* (Emperor), *Cæsar Augustus*, given to all the Roman emperors after Julius and

COIN OF ANTIOCH IN SYRIA, WITH THE HEAD OF AUGUSTUS.

Augustus. The title of *Dominus*, Lord, was first assumed by Aurelian, A.D. 270. Various other titles, epithets, and terms of dignity were assumed by the pride and ambition of the chief rulers of the Roman empire, until at last the terms ΒΑΣΙΛΕΥΣ King, and ΔΕΣΠΟΤΗΣ Despot, are found as legends upon their coins. Other titles are the names of officers; as COS. for *consul*, with a number annexed to it, signifying how many times the person had been thus elected. TRIB. POT. the year of his *tribunitial authority*, the number being added to the preceding words. P.M. denotes the office of *Pontifex Maximus*, or high priest: this title was taken by the emperors, and expressed among their other titles, from Augustus to Constantine.

On the *reverses* of the large early copper coins there is only the word ROMA. Afterwards, on the reverses of what are called "consular coins," occur the peculiar designations of public officers; while the obverse bears the head of a deity, generally without a legend. In time, the magistrates put the head of some illustrious ancestor on the coins, with his name. Cæsar, when made Perpetual Dictator, was the first Roman who put his own head on his coins, with the legend of names and titles on the obverse, and not on the reverse, as before. Before this time the portrait of no living personage appears on a Roman medal; and even the plan of engraving on coins the names of great men and magistrates was only introduced about the year 80 B.C.

"In the earliest and more simple days of Rome," (says Akerman in his *Numismatic Manual*,) "the portraits of no living personage appeared on the public money; the heads were those of their deities, or some personage who had received divine honours. Julius Cæsar was the first who obtained the express permission of the senate to place his portrait on the coins; and the example was soon followed by others. The heads of Lepidus, and of Antony, appear on their denarii, and even the money of Brutus with the two daggers and cap of liberty, bears on the obverse the head of the man who killed his friend because he had assumed the regal power and authority. We have no evidence, however, that this money, which is of great rarity, was struck with the knowledge and sanction of Brutus; and it is possible that it is a posthumous coin."

Medals are sometimes dug up singly, or in small numbers, where they seem to have been thrown by accident, or rather to have been buried; but the principal stores of ancient coins are found in tombs, or in places where fear, avarice, or superstition had deposited them for the sake of security.

SECTION II.

COINS AND MEDALS IN A CABINET—GREEK MEDALS—THEIR CHARACTERISTICS—CIVIC AND MONARCHICAL—GREEK IMPERIAL COINS—ROMAN MEDALS—CONSULAR AND IMPERIAL—COLONIAL COINS—COINS OF OTHER NATIONS—BRACTEATES.

We must now take a cursory view of Medals, as ar-

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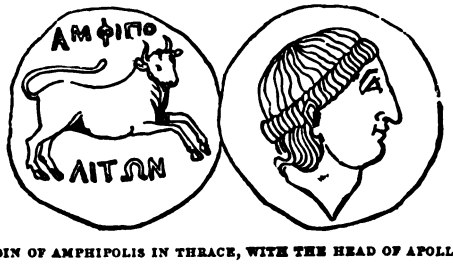
ranged in the cabinet of the antiquary, noticing, as we proceed, the principles and rules which direct him in making such an arrangement.

GREEK MEDALS claim the first place in a cabinet, by reason of their antiquity and their workmanship. Coinage began, perhaps, about 1000 B.C.—for before that time, *weight* was the only principle of estimating money, as we learn from the Scriptures and other ancient writings. The following are the stages of the progress of coinage: 1. Coins, or mere pieces of metal without any impression. 2. Those which have a hollow indented mark or marks on one side, and an impression in relief on the other: this sort of coinage was used from about 900 to 700 B.C. 3. Such as have an indented square divided into segments, with a small figure in one of the segments, the rest being vacant; and impressions on the obverse as usual. This sort of coinage lasted till about 600 B.C. 4. Those which are struck hollow on the reverse, while the obverse is in relief, usually with the same figure; which coins are perhaps coëval with those of the last class. 5. Coins in which a square dye is used, either on one or both sides: these lasted till about 420 B.C. 6. Complete coins, both as to obverse and reverse: such occur in Sicily, where the art was carried to great perfection as early as 490 B.C.

The best informed antiquaries consider that the most ancient coins, as well of Greece as of other countries, are distinguishable by the following marks:—1. They have a sort of oval, swelling circumference:—2. Their letters are of an antique character:—3. Part of the legend is in the common style, while the next is retrograde:—4. They have the indented square:—5. The process of their coinage is of a simple character:—6. Many of them are hollowed on the reverse, and have the image impressed on the front:—7. The dress, symbols, &c., are often of the rudest design and execution. Among other coins which bear marks of great antiquity, are some Persian pieces, with the archer upon one side, and the hollow square upon the other. At one time, indeed, many of the coins and medals of Athens were square; and all over Asia and Africa there once circulated not only square, but octagon money. A kind of square money of red copper, was used in France, in the time of the Emperor Honorius, A.D. 420. Though the Athenians possessed mines of copper, yet they were so unwilling to employ this metal as specie, that they preferred gratifying their taste or vanity by cutting silver into such small pieces, that they were sometimes mistaken for scales of fishes. Gold was also very scarce at this time, when a copper coinage had not yet been adopted.

In the course of time, the Greeks acquired great elegance; evincing strength, beauty, and relief in their impressions. The modern medallist distinguishes the early Greek medals into *civic* and *monarchical;* or *cities* and *kings:* those of cities being generally the most ancient. The civic medals are usually stamped on the obverse, with the head of the genius of the city, or of some favourite deity; while



COIN OF AMPHIPOLIS IN THRACE, WITH THE HEAD OF APOLLO.

the reverse often presents some symbol used by the city, at the time when the piece was struck. The legend contains the initials, monogram, or whole characters of the name of the city. The civic coins interest by their variety, and are particularly useful in elucidating ancient geography. They present us with a view of the customs, laws, and religion of ancient cities; and likewise shew the wealth and power of each city and country.

"In the types of some of the earliest Greek coins, we find a spirit and boldness both in design and execution, with which many of the more elaborate productions of modern times will not bear comparison. The rude and often misshapen lump of silver, upon which these types are impressed, contrasts most singularly with the wonderful freedom and spirit of the design. Armour, weapons, animals, plants, utensils, and the most graceful representations of the human figure appear in infinite and astonishing variety within a space so circumscribed, that the artists of antiquity would seem to have sometimes vied with each other in the production of the most striking representation within the smallest possible limits."—AKERMAN.

The monarchical coins of Greece are often of the same construction with the civic; only that they bear the name of the prince on the reverse. They usually have the bust of some deity in front; and seldom the image of the prince. These coins chiefly interest by their portraits, and are important in clearing up ancient History. The most ancient series is that of Macedon, commencing about 500 B.C. By the time Philip II. became king, the Macedonian coins began to be beautiful: those of Alexander the Great, about 350 B.C., are wonderful; for in his time the art seems to have attained its highest perfection. It is to the Greek coins that were struck before the cities and sovereignties of the Greeks were included in the Roman empire, that the highest praise of the best judges has been awarded.

ANTIOCHUS V.

ANTIOCHUS VII.

The Grecian imperial coins are those which were struck when Greece formed part of the Roman empire: but it is usual to consider those Greek coins of cities, which have the head of an emperor or empress, as imperial Greek coins: while those which have no such impressions, are classed with Grecian civic coins, though struck under the Roman power. Of imperial Greek coins none occur in gold: but there are in silver, those of Antioch, Tyre, Sidon, and other trading cities in the then opulent and commercial cities of Western Asia: of this sort are the coins of Ephesus, many of which bear a representation of the celebrated temple of Diana, referred to in the nineteenth chapter of the Acts of the Apostles.

COINS OF EPHESUS.

The Greek imperial brass coins are very abundant. Those of Antioch, which commonly have a Latin legend on the obverse, and Greek on the reverse, are so numerous as to furnish a series of almost all the emperors; being apparently struck for the purpose of paying the Roman forces in the East.

We shall not attempt to specify the precise values of coins, whether Greek or Roman; first, because it would be somewhat tedious and uninteresting; and secondly, because such values, in English money, are even now open to dispute. We must, therefore, content ourselves with observing, that as *weight* originally served for the principle of estimating money; still, in settling very large sums weight continued to be taken as the standard, long after coined money came to be used. Hence the *Mina* and *Talentum*, the former containing 100 silver Attic drachms; and the latter 60 minæ. The mina and talent were therefore estimated by weight: but of the *coined* money, there were three chief sorts;—the obolus (brass) worth nearly 1½*d.* English; the drachm (silver) 9*d.*; and the Philip (gold) nearly 17*s.*

The term "Philip" became in the course of time a general

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name of gold money in Greece, for many years after Philip, King of Macedon, in whose reign such gold pieces were coined. But the values of the obolus, the drachm, and the Philip, were various in different states of Greece; and there were likewise many multiples and divisions of the same.

ROMAN MEDALS claim the next place in the cabinet of the antiquary. The first Roman coins were large pieces of brass rudely impressed, and only on one side, with the figure of an ox, a ram, or some other animal; whence money was termed *pecunia*, from the Latin word *pecus*, cattle. In process of time this impression was changed to that of a bust of Janus upon the front, and the prow of a ship upon the reverse; and for more general use, pieces of inferior weight and value were coined.

The grand distinction which marks the Roman coins, considered as medals in a cabinet, lies between the *Consular* and *Imperial*. The Roman consular coins seldom or never bore the names or titles of consuls till towards the close of that sort of government; but they are nevertheless properly called *consular*, because they were struck in the consular times of Rome. Those of the later *as* are also often called *coins of families*, from the circumstance that the names of many of the principal families of Rome were placed upon the fields of the coins,—and they are always arranged alphabetically in families, according to the names which appear on them. The *brass* consular coins are not very interesting; as they consist chiefly of large unwieldy pieces, with types of insipid similarity. Few of them have any imagery or symbol. Such large pieces are generally kept in boxes apart, by those who are well acquainted with them. We are told however, that the Romans at first coined in lead, and afterwards, in the reign of Numa, in copper, before using brass. Servius Tullius made the as of brass, B.C. 550. The *silver* coinage began at Rome about 266 B.C. The denarius was the first and last form which it assumed; for the other sizes are so scarce, that very few seem to have been struck. On the later consular medals is seen much of that fine personification afterwards displayed on the imperial coins. About 62 years after the coining of silver, *gold* began to be coined at Rome. Of the consular coins and medals in copper and brass, there may be nearly 500; about 3000 in silver; and about 160 in gold. Most of the gold consular coins are of great beauty and high value.

The Roman imperial coins claim our attention more particularly, owing to the extent of the Roman empire and our own connexion with it; interesting us therefore as much, or more than those of our own country. These coins are often distinguished into those of the upper and lower empire: the upper empire commenced with Julius Cæsar, and ended A.D. 260; the lower empire lasted from thence to the taking of Constantinople by the Turks, A.D. 1453. All the imperial medals up to this date are usually reckoned among the antique; and yet there are none of any considerable beauty later than the age of Heraclius, who died A.D. 641. After the time of Heraclius, Italy became a prey to the barbarians; so that the coins and medals which appeared up to his time, seem to finish the set or series of imperial medals. To these, however, are added the coins and medals of the Greek emperors who reigned at Constantinople, to a later date. The Gothic medals are likewise considered to make part of the imperial ones: they are so called, as having been struck in the times of the Goths, and in the declension of the empire, and savouring of the ignorance and barbarity of the age.

The imperial series of *brass* coins begins of course, with Julius Cæsar; but some elegance and variety were exhibited in this coinage fifty years before Cæsar's time. It is of three sizes; large, middle, and small. The *large* brass coins form a series of surprising beauty and vast expense. In this series the various colours of the *patina*, or oxidation, have the finest effect; and the great size of the portraits and figures conspires to render it the most important of all the Roman coinage: so that it even exceeds the gold in value, though the intrinsic value of each piece is only about twopence English. The series of the *middle* brass coins exceeds that of the large brass, but has not such elegance of work, or of types. Many coins are common in this series, which are rare in the other; and but very few examples occur to the contrary: hence this series is not so valuable as the first. There are, however, some rare and curious coins among them, particularly such as relate to the ancient history of this island, among which are some that personify the country *Britannia*, in a manner similar to what we have it on the copper coins of the present day. The *small* brass series has many curious coins, and particularly of the usurpers in the latter days of the Roman empire.

ROMAN COINS.

The brass coins are distinguished by the letters S.C. *Senatûs Consulto*,—by a Decree of the Senate; because the senate alone had the power of striking brass, while the emperor himself had that of gold and silver. If, therefore, the S.C. be found wanting on any brass coin, it is supposed that such coin was once plated for the purpose of forgery. The large brass coins are of the size of our crown-pieces; the middle brass are of the size of our half-crowns; and the small brass coins are not bigger than our shillings, and are also smaller. The small brass series extends from the beginning to the close of the Roman Empire, or to about 670 A.D.

The *silver* imperial coins are very numerous and various. This series is as complete as any, and of far cheaper purchase, as very few of the emperors are scarce in silver. Most types of even the large brass and the gold are found in the silver, which thus unites the advantages of all the metals. Sometimes the silver and gold coins, as being of one size, are struck from the same dye. But the imperial *gold* forms a series of wonderful beauty and perfection, attainable only by men of princely fortunes. In these the workmanship is carried to the greatest height; and the richness of the metal is surpassed by that of the types. As gold does not suffer from rust, the coins are for the most part in the same state as they came from the mint. Mr. Pinkerton infers that the number of Roman gold imperial coins may amount to 5000; the silver to 10,000; and the brass to 30,000; and that all the ancient coins together may reach to the number of 80,000: but this calculation, he says, cannot be very accurate.

We come now to the COLONIAL coins of Rome. As Roman colonies were settled in various parts of the empire, their coins have sometimes Greek, and sometimes even Punic legends; though generally, the legend on one side of such coins is Latin: but those with Latin legends only are

ANTIOCH IN PISIDIA.

far more numerous. The colonial coins are only in brass: some of them are elegant; though most of them are rude and uninteresting. They begin with Julius Cæsar and Anthony. The only British Roman colony which had its own coins, was that of Camalodunum, supposed to be Maldon or Colchester, in Essex. This species of coin is one of Claudius, about A.D. 50; on the reverse is a team of oxen, with COL. CAMALODON. AUG.

On the reverses of Roman colonial coins, easily distinguished by their rude fabric, and the name of the colony on them, commonly beginning with COL. where an ensign stands alone, and without any persons, it shews a colony drawn from one legion; but when the ensigns or banners stand together, they evince the colony to have been drawn from as many legions as there are ensigns.

The subjoined is a representation of a coin belonging to Gadara, one of the towns of the Decapolis, of which we read in the Gospels of St. Matthew and St. Mark. The Decapolis was eastward of the Lake of Tiberias, and Gadara was the chief city of the Roman province of Perea. The inhabitants, being

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COIN OF GADARA.

rich, sent ambassadors to Vespasian, when he advanced against Judæa, and gave up this strong city to him. The ship, which occurs so frequently upon ancient coins, is indicative of commerce; as appears likewise on the Phœnician coin at p. 88.

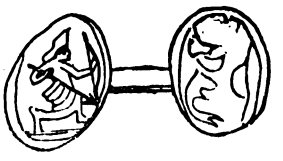
The Roman coins have been most extensively spread: some of them have been found in the Orkney Islands; and they have likewise been discovered in great numbers in the most remote parts of Europe, Asia, and Africa, at that time known.

The Romans, at the commencement of their civil polity, reckoned money by *weight*, as we observed before. Their chief coined money was the *as* in brass, the *denarius* in silver, and the *aureus* in gold. The as was worth rather more than three farthings of our money, the denarius almost 8*d*., and the aureus rather more than 20*s*.

"It has been well observed that the military genius of the Romans is never more apparent than in their medals: in the warlike emblems which are constantly to be found upon them: in the frequent representations of harangues to their soldiers: and of rewards for military services. We are convinced by the same means of their extravagant superstition, from the frequent proofs of the deification of their emperors, consuls, and magistrates, of the superb temples which were erected to their honour, and the sacrifices which were regularly paid to their memory."—HALL.

We pass on now to make a few brief observations on the coins and medals of other nations, usually termed *barbarian*, premising that, by *ancient* coins, all before the ninth century, or age of Charlemagne, are meant; all after that period being deemed *modern*. No coins are found of Babylonian or Assyrian kings; the oldest found in those parts being Persian, and similar to the Greek. The Greeks seem to have preceded the Phœnicians in coining money, as the oldest Phœnician coins are not above 400 B.C. The great trading cities of Tyre and Sidon weighed their money; and coinage was long unknown in Egypt; for the thin, broad pieces of gold found in the mouths of mummies, and put there for the purpose of paying the passage of the souls into the infernal regions, have no mark upon them. India and China have no early coinage. The Lydian coins, therefore, seem to be the most ancient in Asia. Next to these are the Persian, well known by the ram, under which figure that state is alluded to in Scripture, in the book of Daniel; as also by the archer. None of these coins can be older than 570 B.C., when the Persian empire began. The famous Darics were issued by Darius Hystaspes, who began to reign 521 B.C. They occur both in gold and silver, and bear some resemblance to the coins of Ægina, before mentioned. The Darics, from their extreme scarcity, are supposed to have been melted down by Alexander the Great for his own coinage, when he conquered Persia. The gold Darics were worth rather more than the English guinea, and were preferred throughout the East for the fineness of their gold.

PERSIAN COIN.



THE GOLD DARIC.

PERSIAN COINS.

There is a second series of the Persian coins; that of the Sassanidæ, which begins about A.D. 220, when Artaxerxes overturned the Parthian monarchy. The Parthian coins have all Greek legends, but the later Persian bear only Persian characters: they are large and thin; with the king's bust on one side, and the altar of Mithras on the other, generally with a human figure on each side. The

PERSIAN COIN.

letters on Persian coins seem to partake of the ancient Greek, Gothic, and Alanic. The later Persian coins extend to the year A.D. 636, when Persia was conquered by the Arabian caliphs.

The Hebrew shekels are of silver. They were originally didrachms (1*s*. 3*d*.); but after the time of the Maccabees, about B.C. 140, when the Hebrew nation first struck money for itself, they were coined of the value of the Greek tetradrachm, (2*s*. 6*d*.) The brass coins with the Samaritan characters, are many of them earlier than the Christian era, but

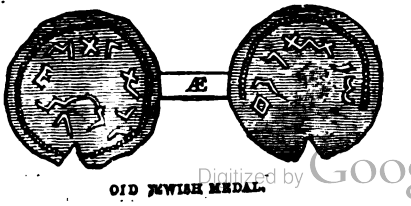
JEWISH SHEKEL.

were not current until after the return from the Babylonish Captivity, B.C. 536. Most of the Jewish coins have the sprig on one side, and the vase on the other, as on the shekel; the sprig bearing reference to Aaron's rod that budded, and the vase to the censer of incense.

The coins of the heathens were usually stamped with the symbols of their idolatrous worship, to use which was a source of continual affliction to the Jews. In the time of Simon they were released from this grievance; and we find that on their own national coins, there is no representation of man or other creature upon it;—no portrait of any person, prince, or deity. In the annexed coin the ears of wheat are emblematic of the fertility of Canaan, and the tent refers to the Feast of Tabernacles.

JEWISH COIN.

There is also a curious old medal, which attests the truth of History, by referring to certain privileges which the Jews received from the Syrian monarch in the time of Simon,



OLD JEWISH MEDAL.

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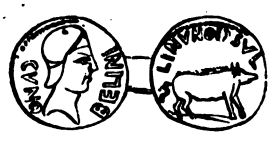
140 B.C. On the front, in the old Samaritan character, is "*the fourth* year," and on the reverse—"from the deliverance of Jerusalem."

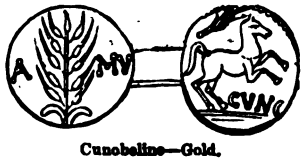
The Phœnician coins, which begin to appear about 400 B.C., and of which we give one referring by the legend to the Sidonian goddess, Astarte, as also the Carthaginian, are rendered interesting by the ancient civilization and great power of those nations: their alphabets are nearly allied to the Syriac, Chaldaic, and Hebrew. Coins of Palmyra, the "Tadmor in the wilderness"—or "City of the Palms," have likewise been found with a similar mixed alphabet. The Tuscan coins are inscribed with a character connected with the old Greek and Latin. The ancient Spanish coins have a character belonging to old Greek, or Punic: they are ancient, and not all struck by the Punic colonies; for the legends are in different characters. The ancient coins of Gaul are also numerous, and many of them in base gold; but, unhappily, the most ancient have no legends at all.

PHŒNICIAN COIN.

It seems that our ancient British ancestors used brass, apparently coined, as a superior metal, as more advanced nations used gold; and also iron rings for money, examined and reduced to a certain weight. Rude coins of copper, much mingled with tin, are frequently found in England, and are perhaps the copper coins used by our forefathers in the days of old. We have many coins of Cunobeline who was king of the Trinobantes, and was educated at Rome, at the court of Augustus. These coins of Cunobeline are the only ones apparently ancient British. Most of them have



Cunobeline—Silver.



Cunobeline—Gold.

at least, CVNO on one side, with an ear of wheat, a horse, a kind of head of Janus, or some such symbol; and oftentimes CAMV, thought to be the initials of Camudolanum, the chief city of his kingdom, on the other side, with a boar and tree, and a variety of other badges.

It seems that, after the arrival of the Romans in this island, the Britons imitated them, coining both gold and silver, with the images of their kings stamped on them; but when the Romans had subdued the kings of the Britons, they also suppressed their coins, and brought in their own, which were current here from the time of Claudius to that of Valentinian the Younger, about 400 A.D. There are some coins of Antoninus Pius, about A.D. 150, the reverses of which present, as we before observed, almost the same type as that which we have on our present copper coinage.

All the kings of France down to Charlemagne range in this division. Liuva I., who began his reign A.D. 567, and the other kings of the Western Goths in Spain, appear upon their coins, encircled with Roman characters. Other Gothic kings, who reigned in Italy and other countries, after the fall of the Roman empire in the West, likewise use the Roman language in their coinage. They most commonly occur in the size of medals, termed *small brass*. Many coins also occur with legends, which though meant for Latin characters, and in imitation of Latin coins, are so perverted as to be illegible: such are, in general, termed *barbarous* medals.

After the dissolution of the Roman empire, a species of coins termed *bracteates*, was circulated in the newly formed European states. These were, as the name implies, *plated* coins, and belong properly to the middle ages, or what we have termed in this essay, the commencement of modern numismatics.

Before quitting the subject of ancient *medals*, we must notice some of a remarkable character, which have been introduced into this paper. One of these was struck by the Senate in honour of Hadrian, the Roman emperor, about 130 A.D., in commemoration of the great benefits, which he had conferred on the empire. This medal is given at p. 86, and has for its legend—"To the Restorer of the world."

Constantine the Great was the first Roman Emperor who received the rite of baptism. This was performed for him just before his death, which took place, A.D. 337. One of the coins struck upon this occasion, is given below: it represents on the obverse the emperor in his robes, crowned with a wreath of laurel, with the legend, "The Emperor Constantine, Pious, Happy, August." On the reverse is a full length figure of him, cloaked, holding in his right hand a globe, and in his left a rod or wand, with the legend, "To Constantine, the Pious, August, born in Baptism." The letters in the exergue are said to imply that the medal was *coined at London*; but this is objected to.

MEDAL TO COMMEMORATE THE BAPTISM OF CONSTANTINE THE GREAT.

Another medal struck in honour of Hadrian is given at the conclusion of this paper. Under this emperor, a rebellion against the Roman authority broke out in Judæa, headed by the famous impostor, Barchochab (Son of the Star), who set himself up for the Messiah. This war lasted three years and a half. The Jews were completely subdued, and forbidden to even enter the City of Jerusalem. They purchased with money the liberty, not of entering the holy city, but only of looking at a distance on it, and going to mourn its fall and desolation. On the reverse of this medal is represented *Judæa*, kneeling in submission to the emperor, and three children imploring mercy of him.

In another Supplement, we shall enter upon MODERN Coins and Medals, and continue the subject down to the present time.

MEDAL OF HADRIAN, COMMEMORATING HIS VICTORY OVER THE JEWS.

LONDON: Published by JOHN W. PARKER, West Strand, and sold by all Booksellers.

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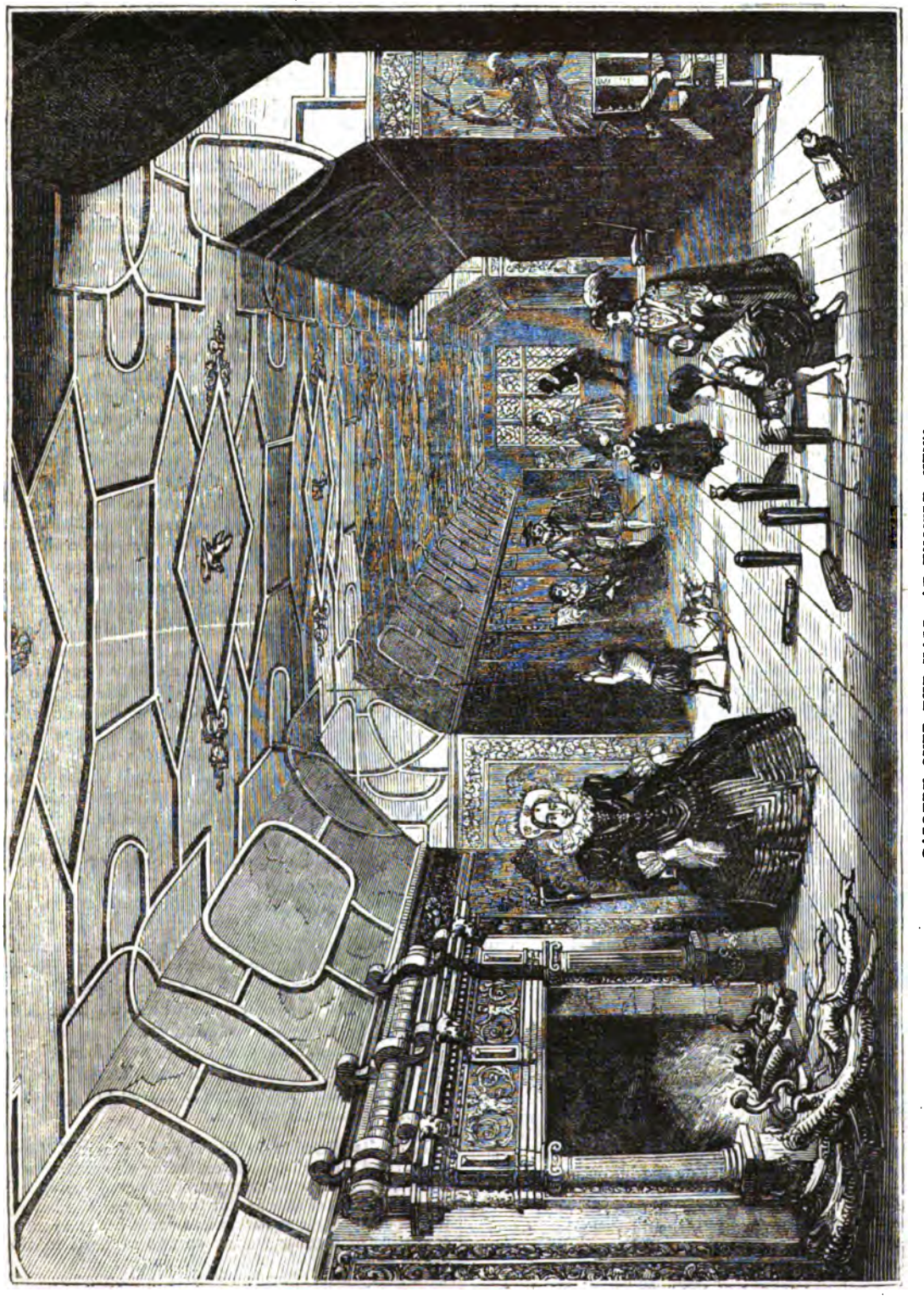
THE

Saturday Magazine.

No. 557. MARCH 6TH, 1841. {PRICE ONE PENNY.



GALLERY OVER THE HALL, AT KNOWLE, KENT

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KNOLE IN KENT.

See with majestic pride, the work of years,
Its reverend front the stately mansion rears;
Within whose ample space the eye surveys
The labour'd excellence of former days;
The model whose perfections art supplies,
Sculpture's light touch and Painting's deathless dyes.

BORROUGH'S *Knole*.

THE stately mansion of *Knole*, or *Knowle*, in Kent, possesses much intrinsic interest, and by its great extent and the magnificence of its internal decorations attracts numerous visitors; it accordingly holds a distinguished place in the second volume of Mr. NASH'S beautiful and instructive work, the *Mansions of the Old Nobility*. Through the kindness and liberality of its possessor, the public curiosity is gratified with a view of the house and grounds, and as this mansion stands at no great distance from the metropolis, it forms a most attractive object of interest to numbers. The house is erected principally in the Elizabethan style of architecture, and has an advantage over many of the other seats of the nobility, owing to the situation it occupies on a commanding and healthy eminence, near the town of Sevenoaks. The building itself covers a space of ground said to be nearly three acres and a quarter, and the park is very extensive and beautifully varied in its features. There is a luxuriant growth of timber, especially of oak and beech trees, for which the soil is naturally adapted; the girth of one of these venerable oaks is no less than thirty feet. Much assiduity and taste have been displayed in the arrangement of the plantations; the trees are not disposed in solitary clumps, but in broad and undulating masses, which rise and fall with the varying nature of the surface.

Two points of view in this noble park are particularly recommended to the attention of the visitor: the one from the *end* of a valley which lies in a south-west direction from the house; the other from a rising ground in the same valley. The first view presents a grove of majestic trees rising on each side; many of them beeches of the largest size, and feathered to the bottom; the mansion, with its towers and battlements, and a background of hills covered with wood, terminating the vista. —The other view is of a very different description: on gaining the summit of the hill, a prospect of great extent bursts at once upon the sight; woods, heaths, towns, villages, and hamlets, are all displayed in bright confusion. The eye commands the greater part of west Kent, a considerable portion of Sussex, and a distant view of the hills of Hampshire. The foreground is woody, the whitened steeples rising everywhere among the trees, with gentlemen's seats scattered round in great abundance.

The beauty of the beech trees in Knole Park, is so remarkable as to attract the notice of all who have a taste for richly-wooded scenery. Among the celebrated persons who have admired and appreciated this feature of the scene, Mrs. Radcliffe may be quoted as an undoubted judge.

In the park, abounding with noble beech groves, (says this gifted lady), is one, on the left of the road leading to the house, which for mass and overtopping pomp, excels even any in Windsor park, when viewed as you descend from the park gate, whence shade rises above shade with amazing and magnificent grandeur. In this mass of wood is one beech, that stretches upwards its gray limbs, among the light feathery foliage, to a height and with a majesty that is sublime. Over a seat, placed round its bole, it spreads out a light, yet umbrageous fan, most graceful and beautiful. With all its grandeur and luxuriance, there is nothing in this beech heavy or formal, it is airy, though vast and majestic, and suggests an idea at once of the strength and fire of a hero! I should call a beech-tree—and this beech above every other—the hero of the forest, as the oak is called the king.

The principal portions of the mansion of Knole form a spacious quadrangle, built in the castellated style, with several square towers. The front of the building is not distinguished by ornamental details, but has an air of great plainness and simplicity. The admirer of architectural grandeur will probably be disappointed at the first view of Knole, and will look with curiosity rather than pleasure on the incongruous mass of buildings which make up the extensive pile. Still more will he be surprised on entering the building to observe the extraordinary number of rooms, galleries, staircases, &c., which surpass all modern conceptions of utility or convenience. Yet all these things are invested with peculiar interest, when we view them in connection with the times and modes of life for which they were adapted, so different to the manners and customs of our own day. The number of visitants hospitably entertained at the old baronial residences, and the extent of the retinue accompanying such guests, must be taken into consideration, ere we speak of these ancient edifices, as displaying a mere love of ostentatious grandeur on the part of those who reared them.

The manor and mansion of Knole were in possession of the Archbishops of Canterbury, during the reigns of Henry the Sixth, Seventh, and Eighth, but in the last of these reigns, they were voluntarily surrendered to the crown by Archbishop Cranmer. After passing through the hands of several possessors it was finally bestowed in the reign of Elizabeth, on Thomas Sackville, Esq., afterwards Baron Buckhurst and Earl of Dorset. The estate has continued almost uninterruptedly in this noble family of Sackville up to the present time; and in the reign of George the First, Lionel Cranfield, the seventh Earl of Dorset, was advanced to the dignity of duke. By the melancholy death of the late duke, a young nobleman of gentle disposition and promising talents, who was killed in hunting, when he had only just attained his majority, the manor devolved on his sisters and coheiresses, the Countesses of Plymouth and De Lawarr. His grace is succeeded in his titles by Charles Sackville Germaine, Viscount Sackville, and Baron Bolebroke.

It would be in vain to attempt to describe the interior of this noble mansion of Knole, so as to give our readers any just idea of its extent and magnificence. We therefore confine ourselves to one of Mr. Nash's admirable views of this mansion, and select on the present occasion the gallery over the hall, at the same time directing those who would desire to see a faithful representation of other portions of this interesting building, to Plates 17, 18, 19, 20, 22, and 23, of the second series of Nash's *Mansions in the Olden Time*. These represent the rich and picturesque *Staircase* which adjoins the Hall, being a fine example of the style of the early part of the reign of James the First; the characteristic apartment called the *Brown Gallery*, with its ceiling of intricate design; the *Room leading to the Chapel*, supposed to be of the date of Henry the Sixth or Seventh; the *Spangled Bedroom*, with its antique furniture; the *Cartoon Gallery*, a splendid and stately apartment with rich carved and painted pilasters and panels, an elegant ceiling and gorgeous hangings, pictures, and furniture; the *Hall*, of noble dimensions, with its fine old screen, a specimen of the wood-carving of the reign of James the First; and the *Gallery*, from which we have taken the frontispiece to our present Number.

The purposes to which this gallery was formerly applied cannot now be ascertained, but from its enriched ceiling and tapestry-hangings, there is reason to suppose it was a room of some importance.

From its situation in the slope of the roof, (says Mr. Nash,) and its great length, extending all across the house, I have, in the absence of any probable conjecture, supposed it to be a place of exercise for the family. The boy pulling the rope is playing at the ancient dumb-bells; a contrivance consisting of a roller resting on two supports in the roof above, and having eight bars projecting at right angles, armed with heavy balls of lead: being set in motion by pulling the rope it revolves with great velocity, and constitutes a pretty strong exercise. One of these "dumb-bells" is actually in existence at Knole, and is occasionally used to this day.

POISONOUS ARTICLES OF FOOD.

II.

Animal Food.

Animal food may become poisonous, either by some diseased state of its system having existed in the animal prior to death, or by its having advanced to a state of putrefaction before being made use of as an article of food. The mere over-driving of animals before they are slaughtered produces important changes in their condition, for, although it is not proved that any dangerous symptoms have resulted from partaking of them, yet when any of their blood or raw flesh comes into contact with a scratch or wound a dangerous or even fatal inflammation results, and by becoming inoculated thus by the juices of the diseased animals the persons engaged in slaughterhouses have frequently lost their lives. In Germany an epidemic disease, termed Mitzbrand, frequently affects the cattle, producing extensive destruction among them, and the flesh of those which die while under its influence acts as a virulent poison upon persons who swallow it, while the mere handling the skin, entrails, &c., produces the same effect. It has been a point of discussion whether the putrefaction of animal food renders it poisonous to man, but it has been pretty generally answered in the affirmative. It is true that the epicure prefers his game, venison, &c., "high," or in other words, in an incipient state of putrefaction, and that many savage nations will consume rancid oil and putrid meat with avidity. But much must be allowed to the force of habit, for it is well known that those who are unaccustomed to "high food" loathe it, and often suffer severely if they partake of it, while persons who have been driven by hunger to feed upon rotten fish, eggs, or meat, have frequently perished in consequence, as the histories of several famines and sieges prove. A species of poison is generated in some articles of diet in Germany. Thus the smoked *sausages* so much consumed in Wirtemburg are often the cause of fatal poisoning; so that, from 1793 to 1827, 234 persons were affected, of whom 110 died,—the symptoms coming on from twelve to twenty-four hours after eating the sausage. The same has occurred in a less degree in Paris, and neither the investigations of the police nor of able chemists could detect the nature of the poisonous ingredient. Those parts of sausages which did the most harm were made of liver; and it has often been observed that the internal organs of animals produced serious mischief, while the ordinary flesh might be consumed with safety. Scoresby says that the flesh of the bear is wholesome and delicious, but its liver produces dangerous symptoms. The sausages were always boiled before they were cured, and the bad symptoms produced by eating them did not occur until slight putrefaction had commenced. The German chemists suppose this poison to reside in a fat acid which is then generated. *Cheese* and *bacon* are other articles which in Germany also often produce poisonous effects, and there being no difference in their smell or taste perceptible, fatal mischief sometimes ensues before the corrupted articles are suspected. Poisonous effects are said to be produced in some of the farms in Cheshire, when the curds are retained too long before they are made into cheese. In France and Switzerland, *milk*, especially that of goats and sheep, has produced at various periods symptoms resembling cholera, or even death itself.

Poisonous Fish. Fish, of all species of animal food, furnishes us with the most frequent and marked examples of poisoning. Exaggeration and difference of opinion, as upon most other subjects, have prevailed upon this; for while, on the one hand, sailors and other persons have often conceived an unreasonable and undiscriminating prejudice against various innocent species of fish, other persons deny that the instances of death from eating these animals result from any poisonous principle they contain, but are rather produced by some peculiarity of constitution in the persons affected. Abundant proof, however, exists that the eating of certain fish acts as a poison both on man and animals, at certain seasons; these fish, however, are usually innocent at other times, while in some constitutions the most harmless species will, even in small quantities, always produce deleterious effects. It is in the tropical regions, and almost exclusively in the Caribbean Sea, that poisonous fish abound: these are especially the barracouda, the snapper, the dolphin, the king-fish, the conger eel, and the yellow-billed sprat: all these, with the exception of the last, are only poisonous at certain periods of the year, namely, the hottest months. The yellow-billed sprat is virulent almost beyond belief, for Dr. Chisholm relates that both the whites and the negroes of the Leeward Islands have been known to expire with the fish yet unswallowed in their mouths. In our own country several species of fish, when eaten out of season, are very indigestible, and sometimes even produce alarming symptoms; the flavour and odour distinctive of the particular fish, depending upon the presence of an aromatic oil, are then very deficient. This applies to the salmon, mackerel, herring, and shell-fish in general; but *muscles* and *oysters* are the species most remarkable for occasionally producing ill effects. There would seem to be good foundation for the saying, that neither of these are wholesome during the months which do not contain an *r*; these being the hottest, during which fish-poison has always been found most virulent. Instances of poisoning by muscles are numerous; but we need allude only to that related by Dr. Combe as occurring at Leith in 1827, and which produced such consternation there that the inhabitants of Leith and Edinburgh have since almost refrained from eating this fish. There were thirty people of the lower ranks of society seriously and alarmingly affected by eating muscles, which had been scraped from off the bar of the dock-yard: two of these died, but the others recovered by judicious treatment. Neither in taste nor smell did these muscles differ from their ordinary state. Salting or cooking fish has not been found preventative of the mischief; but M. de Rondeau asserts, that if muscles be boiled in vinegar and water containing a small portion of cayenne pepper, evil never results from eating them: this is denied by others.

The symptoms from eating poisonous fish are very varied, according to the species employed. In some, they cause violent oppression of breathing, swelled face, insatiable thirst, convulsions, and insensibility; in others, symptoms very like those of cholera. A very common effect is to produce a degree of palsy, while the shell-fish are especially liable to cause the troublesome disease of the skin called nettle-rash, which, owing to the sympathy existing between the alimentary canal and the skin, very often occurs from various other injurious articles of diet. The late Dr. Clarke remarked that women after childbirth who indulged in eating oysters, were very liable to convulsions and apoplexy. The manifestation of these symptoms is both more severe and more rapid in the tropical regions, and with us sometimes several hours elapse before anything serious is suspected. An emetic and brisk aperient should be at once given, and in this climate will usually succeed in preventing fatal mischiefs, although severe symptoms may still ensue, as it is surprising how small a portion of a bad fish will cause them.

The nature of the poison thus contained in these fish has given rise to numerous conjectures. Thus, a very popular opinion has been, that the fish were poisoned by feeding near copper banks, or the bottoms of ships; but inquiry has discovered the fish where copper did not exist, and no traces of such impregnation have been found on the examination of the bad fish by chemical tests. Again, various articles of food of the fish-tribe, as holothuriæ, medusæ, and manchineel apple, have each been charged with producing the change in them, but without

any good evidence. M. de Beume supposes the spawn of the *Stella marina* which lodges in the muscle, is the cause of the mischief. The opinion generally entertained is, that a poison, *sui generis*, is generated in the system of the fish at particular seasons, one marked effect of which is to produce the early putrefaction of the animal, upon which much of its deleterious nature depends; for persons who have eaten of a fish with impunity on one day, have been poisoned by it the next, although it has been salted in the mean time. Autenrieth, tracing the analogy between this poison and that contained in the old cheese and rancid sausages before-mentioned, believes he has detected it in a bitter principle found in combination with a rancid fatty matter.

THANK-OFFERING.

In every place, in every hour,
Whate'er my wayward lot may be,
In joy or grief, in sun or shower,
Father, and Lord! I turn to thee.

Thee, when the incense-breathing flowers
Pour forth the worship of the spring,
With the glad tenants of the bowers,
My trembling accents strive to sing.

Thee, when upon the frozen strand,
Winter, begirt with storms, descends;
Thee, Lord! I hail, whose gracious hand
O'er all a guardian care extends.

Thee, when the golden harvests yield
Their treasures to increase our store;
Thee, when through ether's gloomy field
The lightnings flash, the thunders roar.

Thee, when athwart the azure sky,
Thy starry hosts their mazes lead,
And when thou sheddest from on high
Thy dew-drops on the flowery mead.

Thee, when my cup of bliss o'erflows—
Thee, when my heart's best joys are fled;
Thee, when my heart exulting glows—
Thee, while I bend beside the dead.

Alike in joy and in distress,
Oh! let me trace thy hand divine,
Righteous in chastening, prompt to bless,
Still, Father, may *Thy* will be mine.

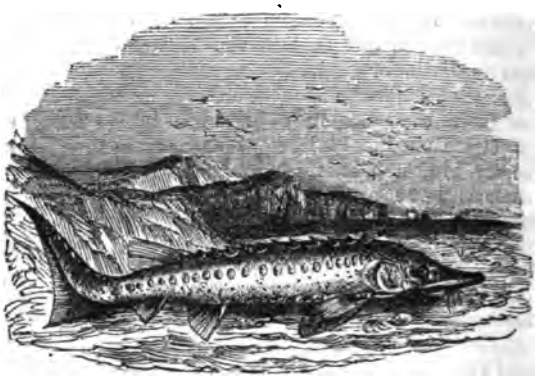
LADY FLORA HASTINGS.

RESOLUTION.

THIS, of all the qualifications of a great man, is perhaps the most efficient and important. A retentive memory, a lively imagination, an acute judgment, and strong passions, may be all useful as qualities of a great man; but they all need *resolution* to bring them to a point. As in the case of a burning-glass, the ray would not burn without the glass, nor the glass transmit heat unless it had the property of collecting the rays into a focus, so it is *resolution* which combines and powerfully applies the other talents. Some are prolific in schemes of usefulness, but are miserably poor in *execution*. Like some trees, they spend themselves in blossom, and never yield fruit. A gentleman, last summer, showed me a fine tree in his grounds, which he said he had resolved to cut down; for, although for years it had produced a finer blossom than any other tree in his orchard, or garden, yet it never bore fruit. He mentioned this to a friend, who said,—"The fact is, the tree *spends itself in blossoms*. I advise you to cut the rind off it, nearly halfway round, and it will probably have less blossom, but it will bear fruit." He did so, and the result was, that it afterwards produced more and better fruit than any other tree in the garden. Let me, therefore, advise you to cut some of the rind from your schemes, that they may not spend themselves in blossoms, but may work out into the fruits of usefulness. Sir Isaac Newton is said to have declared, that he did not consider himself to possess any advantage over other men, except, that whatsoever he considered of sufficient importance to begin, he had sufficient resolution to continue till he had accomplished his object. Dr. Johnson, on the other hand, confessed and lamented, that he was as deficient in this necessary qualification, that he could never do anything till he was forced to it, either by his appetite or his creditors. *Try*, therefore, to acquire the habit of resolution.—GRIFFIN.

THE STURGEON,

(Accipenser sturio.)



THE Sturgeon* belongs to that order of cartilaginous fishes, at the head of which stand the sharks and rays, and which includes the largest and most formidable of the whole class. In consequence of the peculiar structure of the skeleton of these fishes, they continue to grow as long as they live, so that, inhabiting the wide ocean, and meeting but few enemies, they attain such an enormous size, that their weight and dimensions appear almost incredible.

Sturgeons (*Sturionidæ*,) of which only one genus is known, are distinguished by being defended, as it were, by armour, the body being covered by hard bony tubercles in longitudinal rows, sometimes bearing a considerable resemblance to the shells of limpets, and at other times keeled or produced into spines. The head is also armed with bony plates: the mouth is small, and instead of teeth, it is furnished with a horny prolongation of the jaws. The mouth is so formed, as to be protruded and retracted at the pleasure of the animal. The gill-cover is an oval radiated plate; but the aperture is small, and its cover, by being edged with a membranaceous border, closes the aperture so accurately, as to exclude the air.

The common Sturgeon grows to a very large size: specimens have been taken, that measured more than twenty feet long. Its form is lengthened and slender; the snout very long in some species; and the mouth, as in most of the cartilaginous fishes, placed beneath. Several cirri, or worm-like appendages, are seated beneath the mouth, and near the muzzle: this latter organ consists of a transverse oval orifice without teeth, and containing a thick strong tongue; it is bordered above and below by a strong cartilaginous edge or lip, which can be retracted and closed at the will of the animal.

Sturgeons inhabit the seas of Northern Europe and America: they migrate during early summer, into the larger rivers and lakes, and after depositing their spawn, return again to the sea. In North America, sturgeons may almost be called fresh-water fishes, since they are seldom caught at any great distance from the shore. Pennant states, that in some of the rivers of Virginia they are so plentiful, that six hundred have been taken within two days, merely by putting a pole into the water, with a stout hook at the end, and drawing it up again on perceiving that it rubbed against a fish. Regular sturgeon fisheries are carried on during summer near Pillau, and in the river Garonne on the coast of France. In the Canary Islands, Sturgeons are so common, as not to be valued. In our own country, the rivers Eske and Eden are noted for Sturgeon; and from the former was taken one which weighed 460 pounds. Those brought to the London market commonly measure from four to eight feet, and sometimes weigh nearly 300 pounds. Notwithstanding its formidable appearance, the sturgeon

* The etymology of the word sturgeon is a subject of dispute. Some say that the name of the fish is derived from its great size, the Teutonic word *stuhr* signifying *great*. Others contend that it is so called because it *stirs* up the mud as it swims.

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is said to be mild, and even cowardly in its disposition. Its food is small fish and worms.

As an article of commerce the sturgeon is peculiarly valuable. It was in high repute among the ancient Greeks and Romans. Pliny states, that it was brought to table with much pomp and ornamented with flowers; the slaves who carried it being also adorned with garlands, and accompanied by music. The flesh of the animal, pickled, is sent all over Europe, and is a great delicacy. *Caviar* is prepared from the roe: this is freed from its membranes, then washed in vinegar or white wine, and dried by being spread on a board in the air. It is afterwards well salted; the salt being rubbed in with the hand; it is then put into a bag, and the liquor pressed out; it is finally packed in kegs, and is then ready for sale. This is the method of preparing caviar at the mouths of the Volga, Danube, Dnieper, and Don. In 1833, the quantity of caviar shipped from the ports of the Black Sea and the Sea of Azof alone, exceeded a million and a half English pounds weight, and this was but a very small part of the annual supply, because in consequence of the three annual seasons of fasting in Russia the consumption is very great. The principal exports are to Italy; the demand for caviar in England being small. The best caviar is dry and of a brown colour: it is eaten on bread with oil and lemon-juice, or vinegar.

Mr. Long, in his *Travels in North America*, speaks highly in favour of sturgeon broth, and suggests that fish-broths in general have not met with the attention they deserve. He states that at Albany, the sturgeon is so common, that it is sold at a penny per pound, and is called *Albany beef*. Many persons have noticed the resemblance of some parts of the Sturgeon to beef; but the resemblance of the white parts to veal is striking, and generally admitted. Mr. Donovan in his *Domestic Economy*, says:—

Slices of sturgeon, nicely dressed in the manner of a veal-cutlet, are only to be distinguished from the latter by the superiority of the meat, and a certain superadded flavour, which appears to me most to resemble that of the scallop shell-fish, and which exists barely in a recognizable degree. This resemblance to veal is equally observable in the appearance of the flesh, both raw and fried, as well as in the taste. It is usual to make Sturgeon pies, and these are scarcely distinguishable from meat-pies. Were animals to be classed according to their qualities as food, the Sturgeon would certainly be removed from the fishes, and placed amongst the land animals: even the back-bone, if such it may be called, it being mere cartilage, has the appearance and taste of the harder cartilages in veal. I believe the Sturgeon is the only fish which is roasted on a spit like meat.

The Sturgeon is in season during the winter quarter and part of spring. It sells in London at 1*s.* or 1*s.* 3*d.* per pound, but does not often appear in the market. It should be firm; if flabby, its value is greatly lessened. The roe in the recent state is little sought after in this country.

A smaller species of Sturgeon, called the *sterlet*, found in Russia, is in much higher esteem for the table, than the common species. The soup of this fish formed one of the favourite luxuries of that gigantic epicure, prince Potemkin of Russia, who, as Dr. Shaw relates, in seasons when this fish happened to be unusually dear, was content to purchase it at a price so extravagant that a single tureen, forming the mere prelude to his repast, cost him the sum of three hundred rubles: "a sum," says Swainson, "which, had it been expended in promoting the happiness of his miserable serfs, might have called down blessings on the head of this worthless sensualist."

The best isinglass is furnished by the Sturgeon. It is extensively prepared in Russia by the following method. The membranes of the fish, especially its air-bladder and sounds, which are remarkably large, are taken from the fish while fresh, slit open, washed in cold water, and exposed for a short time to the air in order to stiffen; the outer skin is then taken off and rejected. The other portions are formed into rolls about the thickness of a finger, and in length according to the intended size of the staple; a thin membrane is usually selected from the centre of the roll, round which the rest are folded alternately, and about half an inch of each extremity of the roll is turned inwards. The proper dimensions being thus obtained, the two ends of what is called, "short staple" are fastened together by means of a small wooden peg; the middle of the roll is then pressed downwards, which gives it the form of a heart, and thus it is hung up to dry. The sounds which form the "long staple" are of a longer size, but the workman can add to the length by interfolding the ends of several pieces of the sounds. The ends are fastened with a peg as before, but the middle part of the roll is more considerably bent, and in order to preserve the shape of the three angles thus formed, a piece of stick is fastened in each angle: when sufficiently dry, the pegs and sticks are removed and the drying completed; lastly, the pieces of isinglass are collected in rows by passing a thread through the peg-holes for convenience of package and exportation. The "long staple" is the best isinglass, and is used in confectionary and at the table. The common sorts of isinglass, called "book" and "ordinary staple," are composed of membranes which do not admit of being formed into rolls; the pieces, therefore, after their sides are folded inwardly, are bent in the centre in such a manner, that the opposite sides resemble the cover of a *book*, whence its name.

Isinglass is one of the purest and finest of the animal glues and has no particular smell or taste. Beaten into threads, it dissolves in boiling water or milk, and yields a mild nutriment. Isinglass is gelatine nearly pure. Four parts of it convert one hundred parts of water into a tremulous jelly, and it is thus employed to enrich many soups and sauces. It is also used with gum to give lustre to ribbons and other silk articles: dissolved in alcohol with gum ammoniac, it forms the celebrated *diamond cement*, so called because the Turks employ it in setting their precious stones or jewellery, and if well made, the cement preserves its transparency after the setting. Diamond cement is much used in our own country for the humbler purpose of joining broken pieces of glass and china.

Isinglass is also used for "fining" various liquors: the brewer uses it extensively for making his beer transparent, for which purpose crude isinglass is dissolved in sour beer and thus poured into the cask, where, as it is commonly supposed, the floating particles are entangled by the fining stuff added; and the whole is carried down, as if by a net, straining the liquor from the top to the bottom.

Court plaster is made by covering taffety or thin silk with a coat of isinglass. Post office stamps are also made to adhere by means of a similar coating. Isinglass has also been made to perform the office of window glass. Sheets of wire gauze set in window or lamp frames, and plunged into a limpid solution of isinglass, when cold have the appearance of glass. If one dip be not sufficient to make a proper transparent plate, several may be given, taking care to allow one film to dry before another dip is made. The outer surface should be varnished to protect it from damp air. In the maritime arsenals of France, these panes of gelatine are usefully employed for lamps instead of horn; they possess the advantage of being almost as transparent as glass without being so brittle.

The ancient philosophers comprised their wisdom in short maxims. To have made a wise maxim was to acquire renown. Thus in discoursing on prudence, one of them shows his wisdom in uttering these precepts: "*Begin nothing of which you have not well considered the end.*" "*Take care of irrecoverable deeds.*" Crito, one of the seven wise men of Greece, declared, that the highest human wisdom was that sagacity which discerned in the present that which the future would disclose.—S.

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THE SEVEN WONDERS OF THE WORLD.

ANCIENT writers relate the existence of certain masterpieces of art, which, for their vastness or beauty, have been denominated wonders. Every age has, doubtless, contributed its own wonders to these records of human ingenuity; and, to this day, every country of the world has its own class of wonders. But, the earliest authors have conferred a celebrity upon certain monuments of astounding labour, which the productions of subsequent ages have not exceeded in vastness or magnificence of character. These are distinctively termed THE SEVEN WONDERS OF THE WORLD; and though, different writers raise different productions to such pre-eminence, the following may be received as the most accredited enumeration of these wonders:

1. The Great Pyramid of Egypt.
2. The Walls of Babylon.
3. The Hanging Gardens of Babylon.
4. The Pharos of Alexandria.
5. The Temple of Diana, at Ephesus.
6. The Colossus of Rhodes.
7. The Tomb of Mausolus.

It must not, however, be concealed, that the descriptions of these works are so interspersed with fabulous history, that it is difficult to distinguish fact from fiction, especially as vastness is uniformly the characteristic of the objects described. Their proportions may have become more gigantic by that love of exaggeration which may be too frequently detected in the records of the works of man, by early writers. Contemporaries, who first chronicled these wonders, may have been accurate in their details, and their successors may have imposed upon the credulity of mankind; and, in most instances, the truth would be extremely difficult, if not impossible, to determine. However their monuments of art may have ministered to human vanity, it must be allowed, that the imperfections of their history, and, more than all, their disappearance, or present ruinous condition, furnishes an eloquent rebuke to the vain glory of their founders, and leads man from the admiration of these crumbling prodigies of art to the contemplation of the nobler works of him whose omnipotence reigneth for ever.

THE GREAT PYRAMID OF EGYPT usually ranks as the first wonder. This gigantic structure is named after its founder Cheops, King of Egypt, whose tomb it is supposed to be. Its building is stated by Pliny and Diodorus Siculus, to have occupied 360,000 men for twenty years. It is 700 feet in the side of its base, and 500 in perpendicular height, and stands on eleven acres of ground. A better idea to all acquainted with London is the fact, that the base of this Pyramid is the size of Lincoln's Inn Fields, and its height 127 feet greater than the cross of St. Paul's Cathedral, or equal to the spire of Salisbury Cathedral.

THE WALLS OF BABYLON, (for ages the most famous city in the whole world,) rather resemble the bulwarks of nature than the workmanship of man. Their extent is computed by Major Rennell at 34 miles, or 8½ on each side. They were so broad, that, as ancient historians relate, six chariots could be driven on them abreast; or, a chariot and four horses might pass and turn. Their height was 50 cubits, or 75 feet, having been reduced to their dimensions from the prodigious height of 350 feet. Yet these walls are so "utterly broken," that it cannot be determined with certainty that even the slightest vestige of them exists. Mr. Buckingham, a few years since, discovered on the eastern boundary of the ruins of Babylon, on the summit of an oval mound from 70 to 80 feet in height, and from 300 to 400 feet in circumference, "a mass of solid wall, about 30 feet in length, by 12 or 15 feet in thickness, yet evidently once of much greater dimensions each way;" and this heap, Mr. Buckingham conjectured to be a part—the only part, if such it be, that can be discovered of the walls of Babylon.

THE HANGING GARDENS OF BABYLON were distinguished by their romantic situation and vast extent. Their form was square, and, according to Diodorus and Strabo, each side was 400 feet in length, so that the area of the base was nearly four acres. They were made to rise with terraces, curiously constructed in the form of steps, and supported by stone pillars to the height of more than 300 feet, gradually diminishing upwards. This building was constructed by vast stone beams placed on pillars of stone, (arches not being then invented,) which were again covered with reeds, cemented with bitumen, and next was laid a double row of bricks, united by cement. Over these were laid plates of lead, which effectually prevented the moisture from penetrating downwards. Above all was laid a coat of earth, sufficiently deep for plants to grow in it, and the trees here planted, were ranged in rows on the side of the ascent, as well as on the top, so that, at a distance, it appeared as an immense pyramid covered with wood; and being situated upon the banks of the river Euphrates, water was supplied from thence by machinery, for the fountains and other sources for cooling the air and watering the garden. The different groves and terraces also contained parterres, seats, and banquetting rooms, and presented retirement in the midst of civic mirth and din; thus combining the splendour and luxury of eastern magnificence in art, with the simple pleasures of verdant and beautiful nature, the prospect from these elevated gardens was grand and delightful. From the upper area was obtained not only a view of the whole city of Babylon, and the windings of the Euphrates, which washed the base of the superstructure 300 feet below, but of the cultivated environs of the city and surrounding desert, as far as the eye could reach.

This surprising and laborious experiment, (Mr. J. Mason observes,) was a strain of complaisance in King Nebuchadnezzar to his Median queen, who could never be reconciled to the flat and naked appearance of the province of Babylon, but frequently regretted each rising hill and scattered forest she had formerly delighted in. The king, who thought nothing impossible for his power to execute, nothing to be unattempted for the gratification of his beloved consort, determined to raise woods and terraces even within the precincts of the city, equal to those by which her native land was diversified.

Yet, many writers doubt the existence of these gardens: Quintus Curtius refers to their description as "fabulous wonders;" and Herodotus, who describes Babylon minutely, does not mention the Hanging Gardens; and the only author who speaks of them on his own testimony, is Berosus. The most reasonable conclusion at which the moderns have arrived, from these and other conflicting testaments, is, that they were a vast hill cut into terraces, and planted; and some late travellers have fancied that they could discover traces of such a work. The immense height of these gardens, and their projecting in terraces, probably suggested the epithet of hanging.

The supposed remains of these gardens are detached portions of a wall, which probably composed the piers or buttresses of the terraces. In the ruins, lines of long passages and square chambers may be easily traced, which commanded a view of the city. Amongst these ruins stands a solitary tree, of a species altogether strange to this country. It bears every mark of high antiquity, its originally enormous trunk being worn away, and shattered by time, while its spreading and evergreen branches are particularly beautiful, and adorned with long tress-like tendrils; probably the last descendant of those hanging gardens, which were numbered among the wonders of the world*.

THE PHAROS OF ALEXANDRIA was a celebrated watch-tower, built upon the islet of Pharos†. It was finished

* HEEREN'S *Historical Researches.—Asiatic Nations*, vol. ii.
† See *Saturday Magazine*, vol. xii., pp. 40, 208.

in the first year of the reign of Ptolemy Philadelphus; it having been begun several years before by order of Ptolemy Soter. The tower was a large square structure of white marble, and is stated to have been visible a hundred miles distant. It consisted of several stories and galleries, with a lantern at top, in which a light was continually burning, for the direction of sailors.

Ptolemy Evergetes, the successor of Ptolemy Philadelphus, is stated by several ancient writers to have placed in this Pharos, a mirror which represented accurately everything which was transacted throughout Egypt; and some writers affirm, that with this mirror an enemy's fleet could be seen at the distance of 100 leagues. It is scarcely necessary to observe the powers of this mirror must be strangely exaggerated; on which account the existence of the mirror has been disbelieved. Abulfeda, however, describes the mirror to have been of Chinese iron, and adds, that soon after Mohammedanism prevailed, the Chinese destroyed it by stratagem. Buffon thinks, that by Chinese iron, Abulfeda meant polished steel; but there seems more plausibility in the conjecture of an acute writer in the *Philosophical Magazine*, 1805, who supposes the metal to have been what is known to us by the name of *tutanag*, a Chinese metallic compound, which might be valued then, as it now is, for the high polish it receives. A French writer, Father Abbat, attempts to explain the exaggeration of the powers of this mirror, by observing that,—

If it existed, it is probable that it was the only one of its kind, and that no other means had been then found of viewing distant objects distinctly. It must, therefore, have been considered as a great wonder in those times, and must have filled with astonishment all who saw its effects, which, had they not been greater than those of a small telescope, could not fail to be regarded as a prodigy. Hence it is natural to think, that these effects were exaggerated beyond all probability, and even possibility. If we abstract these from the accounts of the mirror of Ptolemy, the evident exaggerations of ignorance, nothing will remain but, that at some distance, provided nothing was interposed between the objects and the mirror, those objects were seen more distinctly than with the naked eye; and that with the mirror many objects were seen, which, because of their distance, were imperceptible without it*.

Of the once splendid Pharos, not a vestige remains at this day; the traveller only finding, instead, an irregularly built castle, from the middle of which rises a tower which serves as a lighthouse, but not to remind the spectator, except by contrast, of the beauty and grandeur of the ancient structure.

The Temple of Diana, at Ephesus, the capital of Ionia, in Asia Minor, is, by many olden writers, considered to have been the most surprising of these wonders. It was the great boast of the Ephesians, the principal ornament of their city, and the depository of the image of their tutelary goddess, Diana.

This superb structure was situated between the town and harbour of Ephesus. It seems to have been several times (Pliny says seven times,) ruined and rebuilt, a circumstance which occurs in ancient writers as to the dates and descriptions of these successive erections. One of them is expressly affirmed by Livy to have been completed in the reign of Servius Tullius, who flourished, at the latest, 500 years before Christ. Another is described, which was originally designed by Ctesiphon, a Cuossian artist, 541 years before the Christian era, whose plan was continued by Demetrius, a priest of Diana, and at length completed by Daphnis of Miletus, and a citizen of Ephesus. One of its destroyers was the notorious Erostratus, 356 B.C., who set fire to the building on the night of the birth of Alexander the Great, his only object in burning the temple being to perpetuate his name. The temple, however, was rebuilt with greater magnificence than ever, by the Ephesians, whose women contributed their trinkets towards the general funds raised for this purpose. The architect was the celebrated Dinocrates, who also built the city of Alexandria.

The dimensions of the temple were 420 feet long, by 220 feet broad. It had 127 columns, each 60 feet high, which were donations from kings. Thirty-six were carved; the order Ionic. It had eight columns in front. The folding doors were of cypress wood, which had been treasured up, highly polished, for four generations; and they were found as fresh and beautiful 400 years after, as when new. The ceiling was of cedar; and the steps for ascending the roof, of a single stem of a vine. The whole altar was full of the works of Praxiteles. The offerings were inestimable; and, among them was a picture by Apelles, representing Alexander armed with thunder; for which the painter was paid twenty talents in gold, about 38,650*l.*

This last temple was plundered by Nero, who carried off an immense quantity of gold and silver; afterwards, in the time of Gallienus, by Goths from beyond the Danube, who obtained a prodigious booty; but the particulars of its final distribution are not on record. Its ruins are now the residence of cowherds and their cattle: from their minute examination by recent travellers, they appear to have been cased and encrusted with rich marbles. The once splendid city of Ephesus is a poor village, called *Aiasoleik*.

Although we find the frequent destruction of the temple of Diana narrated in history, it is difficult to conceive that an edifice of stone could have been entirely destroyed by fire, or if destroyed, that it could have been replaced by the Ephesians, when we find that all the cities of Asia Minor contributed towards the original building, which occupied 220 years in its erection. The narratives of its destruction may, however, possibly relate to the burning of the roof, certain rooms, sacred utensils, and the injury of the costly embellishments. It was, at length, sacked of its valuables, many of which are stated to adorn the mosques of Constantinople to this day.

The Colossus of Rhodes, was a gigantic brazen image of Apollo, whom the Rhodians considered their tutelar deity. Muratori reckons its history among the fables of antiquity, and it so abounds with contradictions, that it would be a more tedious than useful task to attempt to reconcile the conflicting statements.

The first artisan employed upon this prodigious statue is said to have been Chares, the disciple of Lysippus, 300 years B.C. He had scarcely half finished the work, when, finding that he had expended all the money he had received for the whole, he was overwhelmed with despair, and hanged himself. Laches, his fellow countryman, finished the work in the space of three Olympiads, or twelve years. The statue was placed with its feet upon the two moles which formed the entrance of the harbour of Rhodes; and ships passed in full sail between its legs. Its height was 70 cubits, or 105 feet.

A winding staircase ran to the top, whence could easily be discerned the shores of Syria, and the ships that sailed on the coast of Egypt; some accounts state that in the right hand was a large lantern, from which circumstance the statue is supposed to have served as a light-house. It had stood scarcely 60 years, when the figure was thrown from its place by an earthquake, and broken off at the knees. Thus it remained for the space of 894 years, although the Rhodians received large contributions to repair it; but they divided the money amongst themselves, and cunningly frustrated the expectations of the donors, by saying that the oracle of Delphi forbade them to raise the statue up again from its ruins. At length, A.D. 684, it was sold by the Saracens, who then became masters of Rhodes, to a Jewish merchant of Edessa, the value of the brass being estimated at 36,000 pounds English money.

Some antiquarians have thought that the fine head of the sun, which is stamped upon the Rhodian medals, is

* Translated from *Les Amusemens Philosophiques*, Marseilles, 1763.

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a representation of that of the Colossus; and the conjecture is reasonable.

The seventh wonder was the TOMB OF MAUSOLUS, king of Caria, which was built by his queen, Artemisia, in Halicarnassus, 351 B.C.; and whence a superb tomb is to this day called a Mausoleum. The principal architects of Greece laboured on this magnificent structure. It was an oblong square, 411 feet in compass, and 130 feet high. The principal side was adorned with 36 columns, and 24 steps led to the entrance. The top was conical, and surmounted with a chariot drawn by 4 horses, sculptured by Pythes. Bryaxes, Scopas, Leochares, and Timotheus made the decorations on the four sides; and Vitruvius thought that it was enriched by the sculptures of Praxiteles. Artemisia died before the completion of the monument, but the artists finished it without compensation, that they might not be deprived of the honour of their labour. The expenses of the building were so immense, as to have occasioned the philosopher Anaxagoras to exclaim, when he saw it, "How much money changed into stones!"

THE CHINESE FEAST OF THE LANTERNS.

THE commencement of the year in China is observed as the greatest festival in the empire, and the whole of the first month is a season of continued rejoicings. Of these the most splendid is the Feast of the Lanterns, which is held on the fifteenth day, when there is such a profusion of lanterns hung out of the houses that, to a stranger, the whole empire has the appearance of fairy land. All ranks contribute to this national festival. The grandees retrench daily, and reduce the expenses of their table, equipage, and dress, in order that they may expend more on their lanterns, some of which are said to cost two thousand crowns. The middle classes will expend fifty or sixty crowns on the occasion, and even the poorest will exert themselves to join the illumination. In short, in city and country,—on the coast and on the rivers, every person lights up his painted lanterns.

These lanterns are of various forms and sizes. Some of them are so capacious as to resemble mansions, wherein the Chinese eat, lodge, receive visits, have balls, and act plays. Those which are hung from the houses are framed of wood, richly gilt, japanned, and carved and decorated with streamers of silk or satin. Over these frames is stretched fine transparent silk, on which are painted various devices, as human figures, quadrupeds, birds, trees, flowers, &c., the colours of which are very brilliant, when the lantern is lit by lamps or wax candles. The largest lanterns frequently exhibit figures which are set in motion by hidden threads. In this manner the spectators outside the lanterns are often amused by the spectacle of horses galloping, ships sailing, and armies in full march. Some lanterns are lit by serpents, illuminated within from the head to the tail, and contrived to writhe about as if they were alive.

MANY persons pass much of their time in a state of inquietude and constant irritation, although they are in health, and have the means of satisfying the common wants of life, and even abundantly. As to the present, they have some unreasonable desire, which cannot be satisfied, or which cannot be, without causing a suffering more intolerable than the unsatisfied desire. As to the past, they dwell on the memory of some good which they think might have been obtained, or on some wrong or blunder by which some good was lost. As to the future, they dread some possible evil, and the more because of the uncertainty of its nature, and of the time and manner of its coming, and which may never come. There are many persons who are habitually discontented. They find everything goes wrong. The weather is bad; their food is not as they would have it; no one does anything in the right time, or in the right manner; or that is done which should not be, or that is omitted which should be done. Such persons are always groaning, sighing, or grumbling. They dislike everybody, and everybody dislikes them; and particularly, their abundant *advice* is disliked, and their manner of giving it.—S.

THE FETISH.

THE term *Fetish* is derived either from the word *fetisse*, a block adored as an idol; or from *feticzeira*, an enchantress. The Portuguese first gave this name to the idols of the negroes on the Senegal; and afterwards the word received a more extensive meaning. The general application of *fetish* now seems to be to an object worshipped, not representing a living figure. Such a figure is more properly speaking, an idol. Hence, stones, arms, vessels, plants, &c., which are objects of worship, are *fetishes*.

Among the natives of the Gold Coast of Africa, the superstition of the fetish prevails to a baneful extent. The fetishmen, so called from their being supposed to possess supernatural powers, infuse into the minds of the people the belief of its influence, with the view of being consulted on every occasion of trouble. An individual who has been robbed, or has experienced some other calamity, immediately consults a fetishman to discover the thief, or cause of the evil; who, after making use of some pretended magic art, and having obtained answers to questions put by him to the applicant, unhesitatingly denounces some unfortunate being as the robber or witch. The fetishmen are without difficulty bribed, and they accept the bribe under the cloak of having first consulted the deity, who had agreed to receive a certain sum. They will afterwards demand more money in the name of the fetish, whom they will state as not being satisfied. So great is the dread of the natives to offend the fetish, that they even pawn their own children to raise the means of appeasing his wrath. When a person is afflicted with any alarming disease, application for relief is made to the fetishman, who, perhaps, will order an egg near hatching, or a chicken, to be laid on a certain spot in some highway, in order to transfer the complaint to the person who might unthinkingly tread upon it. Passengers noticing any of these charms lying in their way, carefully avoid them, and no one will dare to remove them out of their path.

At Cape Coast, the women, who are generally employed in celebrating the yam harvest, make public offerings in a body to the great fetish; which is a large rock lying close to the walls of the castle. It breaks the great waves of the sea that incessantly dash against it, and thus preserves the fortification from injury by the surge. Another great fetish which they have is a salt pond, in which large and delicious mullets are taken.

Previous to the offering to the fetish, consisting, generally, of yams, eggs, palm oil, and the blood of some animal, being made, the women with their faces and limbs chalked, parade the town in a body, each carrying her own portion in a calabash, or earthen vessel. They then visit the rock, on which they deposit their oblations; and, no sooner do they depart than the turkey buzzards, apparently aware of what is going on, approach and devour the offerings; and it is considered a great offence to the fetish to destroy any of these birds.

All families of consequence have also their own private fetish, which they keep concealed in their houses, but denote its presence there by signs hung outside on the doors. This has a great effect in deterring thieves from the premises*.

Captain Tuckey describes a fetish which he saw at Embooma, on the River Congo. It was about the size of a large doll, and the most grotesque figure imaginable. These fetishes are indifferently carved out of wood, or made of rags, the eyes and teeth are of shells, and the whole appearance as hideous as the workmanship is clumsy. They are such things as children would contrive in sport. Nevertheless, they are unceasingly worshipped and prayed to, though with no great ceremony or devotion. When a glass of brandy is given to an African, he puts it to his lips, then raises his fetish, into whose face he puffs his breath once or twice, with a blowing whistling noise; and then he swallows the dram. A similar action, or a whisper in the ear, takes place whenever the fetish is consulted.

* Communicated by Major Ricketts to the *Literary Gazette*.

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THE PHILOSOPHER LEIBNITZ.

LEIBNITZ'S HOUSE IN HANOVER.

The above cut represents a house, which, however remarkable for its form and appearance, derives its chief interest from having been the residence of Godfrey William Leibnitz, an eminent natural philosopher and mathematician of the seventeenth century.

Leibnitz was born at Leipsic, in the year 1646. His father, secretary of the University, dying when Godfrey was only six years old, the latter was placed at school, where he distinguished himself by the ardour with which he studied the classical writers; and he performed his task with such ease and quickness that he used to have time to assist his less precocious school-fellows in the preparation of their lessons. At the age of fifteen he went to the University of Leipsic, afterwards to that of Jena, and again to Leipsic. Here he studied philosophy and mathematics, and also became so familiar with the writings of Plato, Aristotle, and other Greek philosophers, that he used to ramble about the woods for a whole day at a time, pondering on what he had read, and endeavouring to reconcile the discordant doctrines of his favourite writers.

His advancement in the study of law was as rapid as that in classical learning, insomuch that at the age of twenty he was made Doctor of Laws in the University of Altorf, and was offered the Professorship of Law in the same university. Leibnitz declined the latter office,

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and went to Nuremburg, where he became secretary to a society of alchemists. The reader is aware that the chemistry of those days consisted principally in attempts to discover the means of converting baser metals into gold, and of effecting other wonders which are now known to be unattainable. Leibnitz, however, did not remain long in this capacity; for having gained the favour of an influential man at Mayence, he was advised to apply himself to the study of history and jurisprudence, with a view to qualify himself for some creditable office at Frankfort. Here he soon gave another instance of the versatility of his talents, by writing an admirable treatise on the best method of teaching and learning jurisprudence. This work, and another, written about the same time, caused him to be appointed Councillor of the Chamber of Revision, in the chancery of the electorate of Mayence.

While he filled this last-mentioned office, his comprehensive mind was employed on subjects so very diverse that none but such a genius as his could have had any success in them all. He wrote a treatise on the doctrine of the Trinity, against a Polish writer who had impugned that doctrine. He wrote two treatises on mechanics, which astonished the philosophers of that age, by the boldness and originality of the ideas developed in them; and he also planned a new *Encyclopædia of General Knowledge*.

At this time the military successes of Louis the Fourteenth had made his capital the centre to which distinguished men from various countries resorted; and Leibnitz, who had a strong desire to visit Paris, was enabled to do so as a companion to the son of his patron. Here his genius took a new turn, by being applied to the study of mathematics, a science to which he had hitherto paid but a small share of attention. Huyghens, who had written a valuable treatise on the oscillation of pendulums, was then at Paris, and an intimacy arose between him and Leibnitz, which led the latter to attend to numerous questions in natural philosophy. At this time also he gave an honourable proof of the steadiness with which he adhered to protestant religious principles; for the Academy of Sciences at Paris, appreciating his distinguished talents, offered him a seat in their body, provided he would profess the Roman Catholic religion: this he declined to do.

His patron dying in 1673, Leibnitz came to England, where he was received with much distinction by the philosophers, who corresponded and conversed with him on many subjects of science. But his prospects received a sudden check by the death of the elector of Mayence, and the consequent discontinuance of the pension which Leibnitz had received. The Duke of Brunswick now testified his respect for the philosopher, by granting him an office and a pension, with liberty to devote as much of his time as he pleased to study. Leibnitz then devoted upwards of a year to the unremitting study of mathematics, and then proceeded to take his residence at Hanover, the capital of the Duke of Brunswick's territory, where he wrote a treatise on the national law of the Germanic empire. When the duke died, his successor (afterwards King George the First of England) continued to Leibnitz the favours which had already been awarded him, and also directed him to write a history of the house of Brunswick. This work he commenced on such an immense scale that the main body of the history has never been published: he spent three years in traversing Germany and Italy, for the collection of materials, and the published portions throw great light on the early history of the Germanic tribes in general, though circumstances prevented him from completing that portion which related to Brunswick.

Leibnitz was a man of amiable mind; and being distressed at the sufferings which the Huguenots, or French protestants, experienced, he and Bossuet, a learned French Catholic prelate, entered into a correspondence, with a view of trying whether the differences between the two forms of faith might not be reconciled. In this correspondence Leibnitz displayed as extensive a knowledge of theology as he had previously shown of other subjects: but the attempt failed in its object.

Leibnitz having been chosen a fellow of the Royal Society of London, and seeing how much such a society tended to the advancement of science, he recommended the king of Prussia to found a similar society at Berlin, which was accordingly done in 1701, Leibnitz himself being appointed president, with liberty to reside either there or elsewhere. The Czar of Russia and the Emperor of Germany also consulted him on subjects which related to the progress of science, and he became looked upon as one of the most distinguished men in Europe. In his correspondence and literary productions he employed either the Latin or the French language, because those were the two which were most likely to be understood by the learned men to whom his writings were addressed: the consequence was that his mother tongue, the German, became so much neglected by him, that the few pieces which he wrote therein were in very inferior style.

A very profound and difficult branch of the mathematics, called the differential calculus, the nature of which can hardly be explained to general readers, was invented both by Sir Isaac Newton and by Leibnitz, each one proceeding in a path different from the other. Long controversies were carried on between the philosophers of England and France, as to which of the inventors deserved most honour; but in modern times the acrimony which distinguished this controversy has died away, and men now know how to do honour to both those great mathematicians, without striving to place one on a higher level than the other.

The personal or domestic character of Leibnitz does not yield those points of interest which so frequently arise from the contemplation of a distinguished man in the bosom of his family. Leibnitz was never married. One of his biographers says:—"At the age of fifty he had some thoughts of forming a matrimonial connexion; but as the lady he wished to espouse desired time to consider his proposal, Leibnitz also made his own reflections on the subject, and unluckily came to the conclusion that, though marriage is a good thing, a wise man ought to consider of it all his life." Leibnitz, although of a strong constitution, gradually sank under the immense mental exertions to which he subjected himself. He died on the 14th of November, 1716, at the age of seventy, In person he was of a middle stature, and had a sweet expression of countenance, blended with a studious air. He was short-sighted, but his vision continued excellent, even to his last moments, enabling him to read the smallest print, and to write in a small fine character. He was of a thin habit, but of a vigorous temperament; drank little, supped plentifully, and retired to rest immediately afterwards,—a plan which, in most cases, would be evidently detrimental to health. He remained in bed only a few hours, and sometimes he would even sleep in his chair, and on awaking would proceed to his studies, whatever hour it might be. When deeply immersed in study, he was known to have scarcely left his chair for days together.

There have been few men who have approached so near as Leibnitz to the rank of a universal genius. Theology, classical learning, jurisprudence, history, mathematics, natural philosophy,—all occupied his attention in turn, and all received the stamp of his powerful mind, and made him the wonder of his age. But the reader must not infer that the possession of universal genius is necessary to advance a man to an eminent position among his fellow-men. A clear and steady mind, devoted assiduously to *one* subject, will often produce results more valuable to society than if it were directed to

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several; and the reason why such is the case will readily be understood. An attention to one subject concentrates and systemizes the knowledge which we possess on that subject, and renders it more available and valuable. It has been observed of Leibnitz, that though it is difficult to name any department of human knowledge which has not profited by his labours, or received fresh illustration from his genius, yet his reputation would perhaps have been more solid and permanent had he less ambitiously grasped the whole circle of human science. He has been excelled in theology, in classical learning, in jurisprudence, in history, in mathematics, and in natural philosophy, by others who have devoted their whole attention to one or other of these subjects; whereas he might probably have placed himself on a pre-eminent position in some one of them, had he more especially devoted himself to it. While, therefore, we admire the wonderful range of his genius, and respect his memory for the large accession which he made to the sum of human knowledge, we must not think any the more meanly of those members of society,—whether in past or present ages,—in our own or any other country,—who, with a less gigantic grasp of intellect, have devoted their powers to one particular department of study, making others subordinate to it

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The world around us, with all its changes—the shortness of our stay *here*—the uncertainty of all things with which we are conversant in this transitory life, from the seed that falleth into the ground to die and burst into new life with the return of spring, to the varied scenes of that busy theatre on which man himself, lord of created nature, acts his little day—all these things teach us plainly that this is but a life of trial,—that this vain earth is not our rest.—Daubeney.

Curious anecdotes are related of the effect of music upon animals. Thorville has given the following amusing account of his experiments. "While a man was playing on a trump-marine, I made my observations on a cat, a dog, a horse, an ass, a hind, some cows, small birds, and a cock and hens, who were in a yard under the window. The cat was not the least affected; the horse stopped short from time to time, raising his head up now and then, as if he were feeding on grass; the dog continued for above an hour seated on his hind-legs, looking stedfastly at the player; the ass did not discover the least indication of his being touched, eating his thistles peaceably; the hind lifted up her large wide ears, and seemed very attentive; the cows stopt a little, and, after gazing at us, went forward; some little birds that were in an aviary, and others on trees and bushes, almost tore their little throats with singing; but the cock who minded only his hens, and the hens who were solely employed in scraping a neighbouring dunghill, did not show in any manner, that the trump-marine afforded them pleasure."

That dogs have an ear for music cannot be doubted: Steibelt had one which evidently knew one piece of music from the other; and a modern composer had a pug dog that frisked merrily about the room, when a lively piece was played; but when a slow melody was performed, particularly Dussek's Opera, 15, he would seat himself down by the piano and prick up his ears with intense attention, until the player came to the forty-eighth bar; but as the discord was struck he would yell most piteously, and with drooping tail seek refuge from the unpleasant sound under the chairs or tables.

Eastcot relates that a hare left her retreat to listen to some choristers, who were singing on the banks of the Mersey, retiring when they ceased singing, and reappearing as they recommenced their strains. Bossuet asserts, that an officer, confined in the Bastille, drew forth mice and spiders to beguile his solitude with his flute; and a mountebank in Paris, had taught rats to dance on the rope in perfect time. Chateaubriand states as a positive fact, that he has seen the rattle-snake, in Upper Canada, appeased by a musician; and the concert given in Paris to two elephants in the Jardin des Plantes, leaves no doubt in regard to the effect of harmony on the brute creation. Every instrument seemed to operate distinctly as the several modes of pieces were slow or lively, until the excitement of these intelligent creatures had been carried to such an extent that further experiments were deemed dangerous.—Millingen.

SILK FROM SPIDERS.

The extensive use which is made of silk goods, and the value they have acquired in all civilized countries, have led to various experiments amongst ingenious persons, for the purpose of ascertaining whether a substance or substances might not be obtained from other sources, which should answer the same purpose as that to which the production of the silk caterpillar is at present so widely applied.

At the beginning of the last century a method was discovered in France of obtaining silk from the nests of some species of spiders. It is well known that besides the ordinary web of spiders, there is a small silky bag spun by particular species, for the protection of their eggs. These bags may often be found in the corners of windows, under the eaves of houses, in cellars and vaults, in hollow trees, and in similar protected situations, where neither wind nor rain can reach them. They are much stronger and more durable in their texture than the webs formed to entrap the spider's prey, and in shape they resemble the silkworm's cocoon when it is prepared for the distaff. When first formed, these spiders' bags are of a gray colour, but by exposure to the air and dust they soon acquire a blackish hue.

It was from the bags thus formed by spiders around their eggs that silk was procured, at the time above stated, by a M. Bon, whose dissertation on the mode of obtaining and preparing the silk is extremely interesting. An abstract from this dissertation, together with the observations made by M. Reaumur, and other celebrated naturalists, on the means which the spider possesses of furnishing the material in question, may not be unacceptable to our readers.

The method of classing spiders is usually according to their different colours, whether black, brown, yellow, &c., or sometimes by the number and arrangement of their eyes, some spiders possessing as many as ten of these organs,—others eight,—and others again six. M. Bon notices only two kinds as silk-producing spiders, and distinguishes them from each other, as having either long or short legs, the latter producing the finest quality of raw silk.

The spider is provided with fine papillæ, or small nipples, placed in the hinder part of its body, which are like so many wire-drawing irons, to form and mould a glutinous liquor, with which the insect is provided, and which, on being drawn out through these papillæ, and exposed to the air, immediately dries, and forms silk. Each of these papillæ consists of a number of smaller ones, so minute as not to be discernible, and only made evident by the effects produced. Several distinct threads issue from each, the number of which, on account of their extreme fineness, cannot be counted with any accuracy. The principal papillæ are five in number; but these being made up of innumerable smaller ones, and each of these smaller ones emitting a beautifully fine thread, the total number of threads uniting to form the filament used by the spider is astonishingly great. By this beautiful arrangement the threads can be applied in a greater or less number, according to the strength required in the spider's work; and when all these threads unite and form one, as they do at the distance of about the tenth of an inch from the body of the insect, the tenacity of the principal thread is increased, and its strength is greater than if it were not thus composed of many individual filaments.

In proceeding to notice M. Bon's attempt, and in giving his opinions on the subject, it is necessary to premise that that gentleman, delighted with his discovery, and determined to pursue it under all difficulties, was unconsciously led to exaggerate the advantages connected with it, and to make comparisons between the silkworm and the spider, as silk-producing animals, which were not wholly founded on fact.

A quantity of the spiders' bags were first collected

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by M. Bon, and then treated in the following manner. Twelve or thirteen ounces of the bags were beaten with the hand or by a stick, until they were entirely freed from dust. They were next washed in warm water, which was continually changed, until it no longer became clouded or discoloured by the bags under process. After this they were steeped in a large quantity of water, wherein soap, salt-petre, and gum-arabic had been dissolved. The whole was then set to boil over a gentle fire, during three hours, after which the bags were rinsed in clear warm water, to discharge the soap. They were then set out to dry, during several days, and the carding operation was then performed, with cards differing from the usual sort only in being much finer. Thus was a peculiar ash-coloured silk obtained, which was spun without difficulty, which took readily all kinds of dyes, and might have been wrought into any kind of silken fabric. M. Bon had stockings and gloves made from it, some of which he presented to the Royal Academy of Paris, and others to the Royal Society of London.

The silk was affirmed by M. Bon to be stronger and finer than the common sort, and according to his statement, spiders were much more productive than silkworms, and there were besides the following advantages relating to them: spiders hatch spontaneously, without any care, in the months of August and September, the old spiders dying soon after they have laid their eggs: the young ones live for ten or twelve months without food, and continue in their bags without growing, until the hot weather, by putting their viscid juices in motion, induces them to come forth, spin, and run about in search of food.

The only obstacle, therefore, to establishing a considerable manufacture from these spider bags, that is, the difficulty of obtaining them in sufficient abundance, was attempted to be obviated by breeding young spiders in convenient apartments on a large scale. M. Bon commissioned a number of persons to collect and bring to him all the short-legged spiders they could possibly obtain. These, as he received them, he inclosed in paper coffins, or in pots covered with papers, which papers, as well as the coffins, were pricked over their surface with pin-holes, to admit air to the prisoners. The spiders were duly fed with flies, and after some time it was found on inspection that the greater part of them had formed their nests. It was contended that these nests afforded much more silk in proportion to their weight than those of the silkworm, in proof of which it was asserted that thirteen ounces yielded nearly four ounces of pure silk, two ounces of which were sufficient to make a pair of stockings; whereas, stockings made of common silk weighed seven or eight ounces. It had been objected by some persons that the spider was venomous, and that this evil quality extended to the silk obtained from it. M. Bon, in answer to this prejudice, affirmed that he had several times been bitten by spiders, when no injury had followed; and that the silk, so far from being pernicious, had been found useful in stanching and healing wounds, its natural gluten acting as a kind of balsam. Willing to extract every possible good from his favourite pursuit, he subjected the spider-silk to chemical analysis, and obtained from it a volatile salt, preparing which in the same manner used for the once celebrated *Guttæ Anglicanæ*, he produced drops, which, as he believed, possessed yet greater efficacy: he called this preparation *Montpelier drops*, and prescribed its use in all lethargic diseases.

M. Bon's establishment for the rearing of spiders, at length engrossed a considerable share of public attention, and the subject being considered worthy a serious investigation, M. Reaumur was deputed by the Royal Academy of Paris to inquire into the merits of this new silken material. From the patient examinations of this eminent naturalist, it appeared that there were many serious objections to this plan; and such as were likely to prove quite insurmountable. In the first place, the natural fierceness of spiders renders them unfit to be bred together. On distributing four or five thousand of these insects into cells or companies of from fifty to one or two hundred, it was found that the larger spiders quickly killed and ate the smaller, so that in a short space of time, the cells were depopulated, scarcely more than one or two being found in each cell. In the next place, the silk of the spider is inferior to that of the silkworm both in lustre and strength; and produces less material in proportion, than can be made available for the purposes of the manufacture. The filament of the spider's-bag can only support a weight of thirty-six grains, while that of the silkworm will sustain a weight of one hundred and fifty grains. Thus four or five threads of the spider must be brought together to equal one thread of the silkworm, and as it is impossible that these should be applied so accurately over each other as not to leave little vacant spaces between them, the light is not equally reflected, and the lustre of the material is consequently inferior to that in which a solid thread is used. A third great disadvantage of the spider's silk is, that it cannot be wound off the ball like that of the silkworm, but must necessarily be carded. By this latter process, its evenness, which contributes so materially to its lustre, is destroyed. That the silk articles produced from this material are really deficient in that glossy appearance which constitutes the principal beauty of silk, is fully confirmed by the testimony of M. le Hire, who, when the stockings of M. Bon were presented to the Royal Academy, immediately noticed their want of lustre. The last objection we shall notice against the raising of spiders, was one containing a calculation considered to be an exaggerated one, and it has been regretted that M. Reaumur should have taken extreme cases, if not actually improbable ones, to confute a system so little likely to advance itself as that of M. Bon. The advantages of the culture of silk from silkworms when compared with its production from spiders, must be too apparent to every reflecting person to render it necessary to dwell long on them, or in any way to exaggerate them. M. Reaumur's comparison is to this effect. The largest cocoons weigh four, and the smaller three grains each; spider-bags do not weigh above one grain each; and, after being cleared of their dust, have lost two-thirds of this weight; therefore the work of twelve spiders only equals that of one silkworm; and a pound of spider-silk would require for its production 27,648 insects. But as the bags are wholly the work of the females, who spin them as a deposit for their eggs, it follows that 55,296 spiders must be reared to yield one pound of silk: yet this will only be obtained from the best spiders; those large ones, ordinarily seen in gardens, &c., yielding not more than a twelfth part of the silk of the others. The work of 280 of these would therefore not yield more silk than the produce of one industrious silkworm, and 663,552 of them would only furnish one pound of silk!

An old philosophical gentleman had grown, from experience, very cautious in avoiding ill-natured people. To endeavour to ascertain their disposition he made use of his legs, one of which was remarkably handsome, the other, by some accident, crooked and deformed. If a stranger at the first interview regarded his ugly leg more than his handsome one, he doubted him, but if he spoke of it, and took no notice of his handsome leg, that was sufficient to determine the philosopher to have no further acquaintance with him. Every body has not this two-legged instrument; but every one, with a little attention, may observe signs of this carping, fault-finding disposition, and take the same resolution of avoiding the acquaintance of those infected by it. I therefore advise those querulous, discontented, unhappy people, if they wish to be respected and beloved by others, and happy in themselves, *to leave off looking at the ugly leg.*—DR. FRANKLIN.

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ON CHESS.

VI. Origin of the Names of the Chess-men, *concluded.*

The Rook. The most ancient form of this piece after the introduction of the game into Europe is uncertain: but it was probably that of an elephant, as appears by Charlemagne's chess-men: and this form, with or without a tower, has been retained by the modern Germans, Russians, and Danes.

The Spaniards, Italians, French and English (as Mr. Madden remarks), in more recent times adopted a tower or castle as an epitome of the figure (in the same manner as they took a horse's head for the knight), and hence arises the strange anomaly of a castle representing the swiftest piece on the chess-board.

The earliest form of the chess rook is preserved on the ancient seals of those families both in England and Germany, who bear chess rooks for their arms, on which subject there is much curious information.

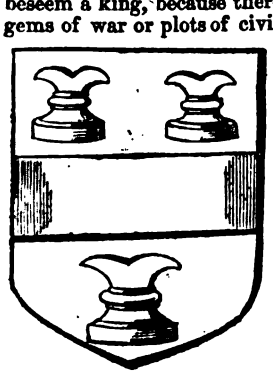
Before the general introduction of cards the game of chess was a great favourite with our ancestors, and we gain some idea of the high esteem in which it was held from the fact that no fewer than twenty-six English families have emblazoned chess-boards and chess-rooks in their arms: it must therefore have been considered a most valuable accomplishment. Gwillim in his *Display of Heraldry* endeavours to show that the arms borne by distinguished persons contain representations of implements or instruments which generally have some relation to the occupation or talents of the first owner of those arms. After speaking of the peculiar implements represented in various arms, he proceeds:—

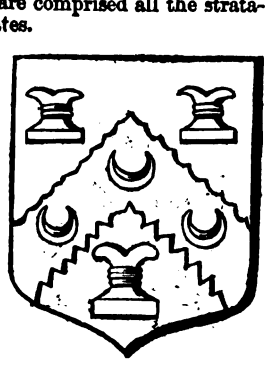
All these have sundry instruments, which may be (and doubtless have been) borne in coat-armour; but because they are not usual I will refer them to each man's own observation, and will give some instances in the last kind of arts of delight, which we call *Playing*, which comprehendeth either theatrical recreation or other games whatsoever.

And forasmuch as their first institution was good, and that they are in themselves the commendable exercises, either of the body or of wit and invention (and if there be in them any evil, it is not in them *per se*, but *per accidens*, because they are abused by those that do practise and exercise them), I have thought good to annex them unto the same: such are table playing, chess, dice, racket, balloon, &c. The things wherewith these games are practised, are borne in coat-armour, as by these examples following may appear.

After describing the arms of a family whose shield contains three backgammon boards, he proceeds to speak of the arms of the Bodhenam family.

It beareth *azure*, a fess between three chess rooks *or*, by the name of *Bodenham*, and was borne by that great lover and promoter of heraldry, Sir Winfield Bodenham, Knt. It seemeth these were first called rooks, for being the defence of all the rest; and therefore they stand in the uttermost corners of the chess-board, as frontier castles. This is a game of noble exercise for the mind, as requiring much forecast and understanding. King William the Conqueror was much addicted to this delight, and lost great lordships at this play. And indeed, were it not too serious a recreation, and going beyond the nature of games, it might well beseem a king, because therein are comprised all the stratagems of war or plots of civil states.

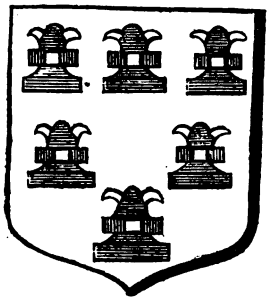




It beareth *argent* on a chevron engrailed between three chess rooks *sable*, as many crescents *or*, by the name of Walter, and was granted to Sir Robert Walter, Lord Mayor of York, 1st of October, 1603, in the first year of the reign of King James the First. The said Sir Robert, upon receiving the king when he came out of Scotland, received the dignity of knighthood.

Azure, a fess *argent*, between three chess rooks *or*, is borne by the name of rooks, and was attested (under an escutcheon of the same painted on vellum) to belong to George Rooks of London, by Sir John Burrough, Garter, 18th of May, 1640.

Arms of the family of Orrook. *Argent*, a chevron *gules*, between three chess rooks *sable*;—But now he gives *sable* or a chevron *or*, between three mullets *argent*, as many chess rooks on the field.



It beareth *argent*, six chess rooks, three, two, and one *sable*, by the name *Rokwood*, and is borne by Nicholas Rockwood of Kirby, in Suffolk, Esq.

Smith of Methuen: azure, a burning cup between two chess rooks in fess *or*.

Many other families have chess rooks and chess boards engrafted on their arms; such as the Rookewoods of Norfolk, the Rooks of Kent; the Rockwoods, Rokewoods, Rokeles, Rockliffes, Rokes, Rockes and Rocolds; but these examples will suffice to show the high esteem in which chess was held until it was to a certain extent superseded by cards. It was never pretended that cards were superior to chess, but they were preferred because unskilful players had a better chance of winning. Before the introduction of cards, chess was in such vogue that both the kings of Spain and Portugal pensioned the great players, whilst they also staked considerable sums on the event of a game. Salvio speaks of three Italians who set out from Naples for the court of Philip the Second, where there was a famous player, and by concealing their strength won very large sums of money. Circumstances of this kind threw discredit on chess, and as it was then the fashion to degrade this noble game by playing for money, persons became afraid to play when they did not know the precise strength of their antagonist, and thus the game went into disuse. Hyde also states that chess was much played both in Wales and Ireland, especially in the latter, where estates often depended on the event of a game.

Augustus, Duke of Brunswick Lunenburg, was an ardent admirer of chess. He published a work on the game at Leipsic, in 1617, under the fictitious name of Gustavus Selenus. He also named one of his towns *Rokcstet* with a chess rook for its arms. This town was also obligated to give to every new bishop a silver chess-board with silver men, one set of which was gilt.

The forked head of the rook shown in the preceding figures was supposed by Dr. Hyde to represent the two hunches of the *ruch* or dromedary, under which figure this piece occurs on the Eastern chess-board. In Iceland the piece is called Hrokr, a brave warrior or hero, which seems to have been the meaning of the ancient Persian term applied to this piece, viz., *rokh*, a valiant hero seeking after military adventures, in which character, says D'Herbelot, it was introduced into the game. Some have attempted to derive the term rook from *ruch* or *roe*, the fabulous bird of the Eastern tale: while Sir William Jones states that the rook is to be deduced from *roth*' of the old

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Hindoo game of chess, which was an armed chariot; this, he says, the Persians changed into *rokh*, the etymology of which latter word has given rise to so much discussion.

The modern French term for this piece is *la tour*, and the English sometimes call it the *castle*. In the early Italian treatises it is represented as a castle, although called *il roccho*. This term having been confounded with *rocca*, a fortress, has given rise to much conjecture.

THE PAWN. The pawns appear always to have been so called by the English. In the middle ages the French used a multiplicity of terms, such as *paon, paonnet, paonnez, paonniers, poons, poonnes*, and *pionnes*. In an old French romance they are called "garçons." Dr. Hyde derives our pawn from the Spanish *peon* or French *pion*, which he thinks a contraction of *espion*, a spy, or *peton*, a footman. Mr. Douce thinks all the foregoing terms derivable from *pedones*, a barbarous Latin term for foot-soldiers, which in this game were represented by the pawns. By the Italians they were called *pedone*, by the Spaniards *peones*. The Russians and Poles make them also foot-soldiers: but the Germans, Danes, and Swedes have converted them into *peasants* (Bauern).

BEAUTIFULLY is it said in the Bible, that "God has set one thing over against another;"—has balanced the real advantages of different human conditions. Were I called upon to select the condition which I should deem most congenial to happiness, I should find myself in doubt and difficulty. I should have to balance abundance of food on the one hand, against abundance of appetite on the other; the habit superinduced by the necessity of being satisfied with a little, with the habit of being disgusted with the trial of much. There are joys, numerous and vivid, peculiar to the rich; and others, in which none but those in the humbler conditions of life can participate.

In the whole range of the enjoyment of the senses, if there be any advantage, it belongs to the poor. The laws of our being have surrounded human enjoyment with limits, which one condition can no more overleap than another. It is wonderful to see this admirable adjustment, like the universal laws of nature, acting everywhere and upon everything. Even in the physical world, what is granted to one country, is denied to another; and the wanderer who has seen many strange lands and cities, in different climes, only returns to announce, as the sum of his experience and the teaching of years, that light and shadow, comfort and discomfort, pleasure and pain, like air and water, are diffused in nearly equal measure over the whole earth.—F.

TRIFLES.—There are a great many trifles in this life, when considered as a whole; it is a common failing to magnify them into serious matters. They may relate to dress, food, visitings, insignificant purchases, management of children, treatment of, and remarks upon, domestics, and a multitude of little matters on which difference of opinion arises. Now, it may not be of the least possible consequence in the long run, whether the matter be disposed of in one way or another, provided no moral duty be broken; yet a sudden observation, in an ungentle voice, will produce an irritating reply, and this a severe rejoinder, and presently the affair

> Resembles Ocean into tempest wrought,
> To waft a feather, or to drown a fly.

This ungentleness, when exhibited in parents, has a mournful effect on the character of children. It is wholly useless, and worse than useless, in asserting authority; it can only be classed among those sad mistakes which tend to make this a miserable world. How can any two rational beings, who must live in familiar intercourse, while they do live, so misapprehend the purposes of life, as habitually to torment each other on insignificant trifles! If any one should be unhappily betrayed into an unbecoming expression, silence best becomes those who hear it.

IT is with our judgments as our watches; none go just alike, yet each believes his own.—POPE.

THE SILPHIUM,

A NORTH AFRICAN PLANT.

THE *Silphium* appears to have been a plant held in much repute by the ancients, from the accounts of it which have been handed down by Pliny and others. When Captain Beechy was travelling in Northern Africa, he met with the plant, or at least one which he supposed to be the Silphium, and takes the opportunity of collecting together much useful information respecting it. To his valuable narrative we shall be principally indebted for our account of this plant.

Captain Beechy introduces his remarks concerning Silphium in the following manner:—

It may here be proper to mention that, on the third day after our departure from Merge, we observed a plant about three feet in height, very much resembling hemlock, or, more properly speaking, perhaps, the daucas, or wild carrot. We were told that it was usually fatal to the camels who ate of it, and that its juice, if applied to the flesh, would fester any part where there was the slightest excoriation. This plant had much more resemblance to the Silphium of ancient times (as it is expresed on the coins of Cyrene) than any which we had hitherto seen: although its stem is much more slender than that which is there represented, and the blossoms (for it has several,) more open. In some parts of the route from Merge to Cyrene we lost sight of this plant altogether; while at others we found it in considerable quantities, growing chiefly wherever there was pasturage. Immediately about Cyrene we observed it in great abundance; and soon ceased, from its frequent occurrence, to pay any attention to it. It is extremely probable that the plant here mentioned is the *laserpitium* or *silphium* in such repute among the ancients.

It appears that the *silphium* was described by Theophrastus as a plant with a large and thick root; and the stem he tells us, resembled that of the *ferula*, and was of about the same thickness. The leaf resembled that of Parsley! the seed was broad and foliaceous; and the stem annual, like that of the ferula. Pliny says, that the first appearance of the silphium in Cyrenacia (a district in Northern Africa) was occasioned by a sudden and heavy fall of rain, which completely drenched the ground, and that the silphium which grew on the spot extended itself over a space of 4000 stadia, and that its nature was wild, and unadapted to cultivation, retiring towards the desert whenever it was too much attended to. How much of this is true is now not easy to decide.

Silphium appears to have been eaten in various ways. The stem and the root were eaten much in the same way that we eat celery. It was so much esteemed, that it constituted a material part of the commerce of Cyrene. In the time of Pliny, Silphium had become so scarce in the market, that a single stalk of it was presented to the Emperor Nero as a present of extraordinary value; and Strabo tells us, that the barbarous tribes who frequented the country about Cyrene had nearly exterminated the plant altogether (in an irruption which they made on some hostile occasion), by pulling it up designedly by the roots; as this was evidently done to injure the inhabitants, it proves that silphium was regarded as valuable.

Alexander the Great discovered a "bill of fare," engraved on a brass column in the royal palace of the kings of Persia; and among the good things that formed the daily provision of the monarch's table, was a talent weight, (about sixty-five pounds, according to Captain Beechy,) of the silphium plant, and two pounds of the extract or juice of the silphium, termed by Pliny *laser*. This laser seems also to have been used as a drug, and to have commanded a high price.

The silphium appears to have sprung up in the pasture lands; and the sheep are reported to have been so fond of it that whenever they smelt it they would run to the place, and after eating the flower, would scratch up the root and devour it with the same avidity; on this account, as Arrian states, some of the Cyreneans used to drive their sheep away from the parts in which the

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silphium was produced; and others surrounded their land with hedges, through which the sheep were not able to pass, when they chanced to approach near the plants. As to the effect which the plant produced on them, it appears to have been somewhat contradictory. According to Pliny, a sign that a sheep had eaten silphium was that he fell asleep, while a goat, under similar circumstances, began sneezing. It appears, generally speaking, to have acted first medicinally upon animals, and afterwards to have fattened them; giving at the same time an excellent flavour to the flesh. Whenever they were ill, it either speedily restored them or else destroyed them altogether; but the first of these effects was most usual.

It is probable, however, (says Captain Beechy,) that it only agreed with those animals which were accustomed to it; at least the plant now observable in the Cyrenaica, which answers to the description of the silphium, is very frequently productive of fatal effects to the animals (particularly the camels) who ate of it, not being accustomed to the soil. One of the reasons advanced by the son of Shekh Hadood, Abou-Buckra, for putting a high price upon his camels at Merge was, that they were going into the country where the silphium was found, which, he said, was very dangerous for them to eat; and the camels which were sent to us from Bengazie, when we were about to leave Grenna, were kept muzzled during the whole time of their stay in those parts where the plant was known to be produced.

As for the effects of silphium upon the human frame, if we are to judge from Hollands' translation of Pliny, made about the year 1600, they were truly marvellous; indeed, at this time, when the qualities of plants were made, by the false science of Astrology, to depend upon planetary influence, it is no wonder that those qualities should be so exaggerated as to appear to us extremely ridiculous.

Of the *laser*, a syrup of silphium, we are told that,

It reduceth those to their natural health who are starven and benumbed with extreme cold. Taken in drinke it allaieth the accidents and grief of the nerves. A great restorative it is with meat, and quickly setteth them on foot who have lien long, and been brought low by sicknesse. Taken in drinke it doth extinguish the venome left in the bodie, either by poisened dart or serpent's sting. Being laid, too, with rue or honey, it is excellent for the carbuncle and the biting of dogs. Being incorporate with sal-nitre, and well-wrought withall beforehand, and so applied, it taketh away the hard horns and dead corns arising in the feet. It is an excellent drawer to the outward parts for to fill up the skin and make a bodie fat.

If any one have a hoarseness, let him (if he can,) get some silphium syrup, for it

Presently scowreth the pipes, clearethe the voice againe, and maketh it audible.

But this is not all:—

Taken in a broth or thin supping, it is good for the pleurisy, especially if the patient purpose to drinke wine after it. It is given with leekes and vinegre to those that wheeze in their chest, and be short-winded, and have an old cough sticking long by them; likewise with vinegre alone, to such as have supped off and drunke quailed milke which is cluttered within their stomacke.

Let us be cautious how we use silphium when we are afflicted with the tooth-ache:—

I would not give counselle (as many writers doe prescribe), for to put it in the concavitie or hole of a decayed tooth, and so to stop up the place close with wax, for fear of that which might ensue thereupon: for I have seen the fearful sequele of that experiment, in a man, who upon the taking of that medicine, threw himself headlong from an high loft and broke his necke; such intolerable pains he sustained of the toothach: and no marvell; for doe but anoint the mussle or nose of a bull therewith, it will set him on a fire and make him horne mad.

Lastly, we may state, for the consolation of those who may be so unfortunate as to have had a flogging, that,

A liniment thereof made with wine and oile is a most familiar and agreeable medicine for the black and blue marks remaining after stripes.

SONG OF BIRDS.

We rose one morning early, while Hesperus was yet in heaven, and the dew lay heavy on the grass, while a few constellations glittered towards the south, and gray twilight gave unspeakable serenity to the face of nature. The cattle were reposing on the meadows, and as yet no curling smoke appeared among the trees.

We stationed ourselves beside an aged tree, whose branches waved over the dark and troubled waters that gushed beneath them; but as the morning began to break, we went down into the valley, and again ascended a woody path that led to the summit of a neighbouring hill, listening to the song of the wakeful nightingales whose sweet mellifluous notes resounded through the woods. He occupied an acacia, that sprung from out a rugged bank, surmounted with aged beech-trees, which in other days kept off the cold east wind from a stately mansion, of which only broken walls and roofless chambers remained. There he concealed himself where all, beside the gray old ruin, seemed bursting into life and beauty, and there he seemed to warble an unknown drama, intermingled occasionally with the most extravagant bursts of joy, and plaintive notes of recollection. Strange, that such a powerful voice can reside in so small a bird, such perseverance in so minute a creature. At one moment he drew out his note with a long breath, now diverging into a different cadence; now interrupted by an unexpected transition. Sometimes he seemed to murmur within himself, and now again his note was full, deep, and clear.

At length all was still; the rushing of a torrent came from a distance on the ear, and the wood-lark, which also loves the silence of the night, poured fourth her music. These sounds had scarcely been heard before, so entirely is the ear entranced, when listening to the full deep melody of the unrivalled nightingale.

But now the morning began to dawn. The stern old ruin was brightened by the first beams of the sun, and threw its long gray shadows over the young green foliage of the beautiful acacia. The lark rose high in air, bearing his song towards the gates of heaven, raising his note as he ascended, till lost in the immensity of space; yet still his warblings came remotely upon the ear, though the little musician was himself unseen. Presently he descended with a swell from the clouds, still sinking by degrees as he approached his nest, the spot where all his affections were centered, and which had prompted all his joy.

How delightful are the feelings which the song of the lark calls forth, whether we include under this general appellation those birds of this species which soar through the clouds, or delight in the shelter of the woods; or as the titlark, in mossy lanes and hedges, though distinguished, rather by the variety, than the sweetness of their notes. The accompaniments of the landscape, the golden break of day, the fluttering from branch to branch, the quivering in the air, and the answering of their young, associate with the song of these wakeful birds, an indescribable feeling of hilarity, which tends to elevate the mind to a state of the highest, and yet most harmless exultation. How often on the breezy common that rises from my native village, have I listened to the cheerful notes of the common lark, when, as Walton well observes, he cheers himself and those that hear him, and then quitting the earth, and singing, he ascends higher in the air, till having ended his heavenly employment, he grows mute, and concerned to think, that he must descend to the dull earth, which he would not touch but from necessity. And now the blackbird and the throstle with their melodious voices bade welcome to the early morning, and bodied forth such enchanting notes, as no instrument, nor sweet sound of warbling voice could imitate. Other wakeful birds were heard in all directions: the laverock, the titlark, the little linnet, and honest robin, who loves mankind both alive and dead. The note of the contented cuckoo was also heard, monotonous, yet cheerful. It is a note, which more than any other of the feathered race calls up the recollections of early youth. Something of melancholy is occasionally blended with it, but it is a melancholy that may lead to a review of our past lives, and the lives of those with whom we have been acquainted. While endeavouring to recall the changes, which a gradual progress from childhood to youth, and from youth to manhood, has occasioned in our friends, we are taught to place less confidence in ourselves, and in those connections which are rapidly being dissolved.

[From the *Progress of Creation*, by Mary Roberts.

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PERSIAN AMUSEMENTS.

THE every-day life of the King of Persia has many interesting peculiarities for the European reader. Of these, Sir John Malcolm presents an entertaining picture, in his *Sketches of Persia*.

The religious duties of the King of Persia require him to rise early. On leaving the interior apartments of the palace, he is met by officers in waiting, and proceeds to one of his private halls, where all the young princes of the blood attend his morning levee. After this is over, he calls for breakfast. The preparing his meals is superintended by the nauzir, or chief steward of the household. The viands are put into dishes of fine china, with silver covers, and placed in a close tray, which is locked and sealed by the steward. This tray is covered with a rich shawl and carried to the king, when the steward breaks the seal, and places the dishes before him. The chief physician is invariably in attendance at every meal. His presence is deemed necessary, the courtiers say, that he may prescribe an instant remedy, if anything should disagree with the monarch; but this precaution, no doubt, owes its origin to other suspicions. When his public duties are performed, the king usually retires to the harem, where he sometimes indulges in a short repose. Before sunset, he reappears in the outer apartments, and either again attends to public business, or takes a ride. His dinner is brought between eight and nine, with the same precautions and ceremonies as at breakfast. He eats, like his subjects, seated upon a carpet, and the dishes are placed upon a richly embroidered cloth. Some of the former kings used to indulge openly in drinking wine; but none of the reigning family have yet outraged the religious feelings of their subjects, by so flagrant a violation of the laws of Mahomed. Bowls filled with sherbet, made of every species of fruit, furnish the beverage of the royal meals; and there are few countries where more pains are bestowed to gratify the palate with the most delicate viands. After dinner, the king retires to the interior apartment, where it is said, that he is often amused till a late hour, by the singers and dancers of his harem.

The royal family not only attend personally to public business, but are continually practising manly exercises, and ardently engage in field sports. The present king is an expert marksman and excellent horseman; few weeks pass without his partaking of the pleasures of the chase. The king has always a historiographer, and a chief poet. The one writes the annals of his reign; the other, who has a high rank at court, composes odes in praise of the royal munificence. A giant and a dwarf were at one period of the present reign part of the royal establishment; and it is never without a jester, at whose witticisms it is courtly to laugh, even when they are most severe. There is little difference between the office of jester at the modern court of Persia, and that which, some centuries ago, existed at every court in Europe.

In the court, there is always a person who bears the name of "story-teller to his majesty;" and the duties of his office call for a man of no mean acquirements. Though passionately fond of public exhibitions, the Persians have none that deserve the name of theatrical entertainments; but, though strangers to the regular drama, their stories are often dramatic; and those whose occupation it is to tell them, sometimes display so extraordinary a skill, and such varied powers, that we can hardly believe, while we look on their altered countenances and listen to their changed tones, that it is the same person, who at one moment tells a plain narrative in his natural voice, then speaks in the hoarse and angry tone of offended authority, and next subdues the passions he has excited by the softest sounds of feminine tenderness. The art of relating stories is attended both with profit and reputation. Great numbers attempt it, but few succeed.

The story-teller is always in attendance upon his majesty. It is equally his duty to beguile the fatigue of a long march, and to sooth the mind when disturbed by the toils of public affairs; and his tales are artfully made to suit the disposition and momentary humour of the monarch. Sometimes he recites a story of the genii; at others, he recounts the warlike deeds of former sovereigns, or the love of some wandering prince.

Mr. Buckingham relates that he saw in the streets of Ispahan a little boy who was singing, with the notes of the lark, in the clearest and most delightful strain. His voice was one of the most melodious that the fastidious ear could desire; but the thrill of it, which charmed at a distance, was produced by quick and violent thrusts of the end of the fore-finger against the windpipe; while, from the length of time which some of these notes were held, the boy's face was swollen to redness; every vein of his throat seemed ready to burst; and his fine black eyes, which were swimming in lustre, appeared as if about to start from their blood-stained sockets. Yet, with all this, no one could wish to interrupt such charming music.

CHINESE DINNERS.

A FESTIVAL given at Canton by one of the Hong merchants, or, as he is more generally termed, "the squire," to a select party of English, is thus described by one of the party.

We sat down in number about fifteen. First, was handed to us bird's-nest soup in small china-ware cups. There were about twenty courses, and dishes innumerable. I counted sixty on the table at one time: they consisted chiefly of small basins, or cups, of the most beautiful china-ware, and were arranged in three rows down the centre of the table. We were told we had the happiness to partake of stewed pigeon's eggs, wild cat, fricassied frogs, dried worms, (particularly recommended as a *bonne bouche* for wine at dessert,) sea slugs, shark's fins, and other delicacies, which, whatever they may really have been, were rendered extremely palatable by the application of a little Japan soy. All the meat, pheasants, partridge, and venison were minced, and served to us in small cups, which, considering that we had no knives or forks, but simply a brace of round smooth and slippery chopsticks, made of ivory, tipped with silver, was extremely embarrassing. All their dishes are remarkably rich; so much so, that it is requisite to drink with them saleling, a kind of wine, or rather spirit of white colour, and not unpleasant taste; the little cup out of which it is drunk, is about the size of one belonging to a doll's tea-service; the ceremony of drinking health is to take up the cup with both hands, bow, and shake heads at each other for some time, drink off the wine, and show your friend the bottom of the cup to convince him that it is empty.

Another grand dinner, with a sing-song, or play, is thus described by the same writer. The place in which it was given, was an immense hall, one end of which was occupied by the stage, and the other with the dinner tables. The sing-song commenced directly we sat down, and continued till we came away. The play opened with the music of cymbals, gongs, bells, trumpets, &c. The performance was a kind of historical pantomime: for the first hour it was one continued battle of various success. The warriors were very splendidly apparelled, and some were decorated with little flags; they were armed with shields, bows, battle-axes, &c. These heroes rushed to the combat with a rotatory motion, like our modern rockets, and went whizzing round and round with great velocity, brandishing their weapons in every direction, and yet contriving to pass without touching each other. The subject of the pantomime appeared to be the setting up, crowning, and pulling down, and killing of emperors. The next exhibition was a kind of comedy, or farce, in which the characters and scenes were more modern and intelligible. Between the acts, tumbling was introduced. There was one very singular feat: they placed a table in the middle of the stage, and the whole troop, to the number of between twenty and thirty, threw themselves over it head foremost, one after another as fast as possible, and sometimes three and four plunging over at the same time. Another feat was the formation of a human pyramid, the men standing upon one another's shoulders; which when complete, whirled round with wonderful rapidity.

Tea-drinking in China materially differs from the custom of this country. Green tea is thought very highly of by the Chinese, and is but rarely drank. "Indeed," says the writer just quoted, "during the whole time I was in China, I never once tasted green tea, black being the only kind drunk by the Europeans as well as the Chinese. The latter are eternally drinking tea: in every shop there are always some small tea-cups on the counter; they put the tea-leaves at the bottom of the cup, pour hot water on them, put a cover over, and let it stand till ready; they never add milk, and seldom sugar."

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RESIGNATION, BY FLAXMAN

VOL. XVIII.

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JOHN FLAXMAN AND HIS WORKS.

I.

First, elder Sculpture taught her sister art
Correct design where great ideas shone,
And in the secret trace expression spoke:
Taught her the graceful attitude; the turn,
And beauteous airs of head; the native act,
Or bold, or easy; and, cast free behind,
The swelling mantle's well-adjusted flow.—THOMSON.

WE are told that the father of JOHN FLAXMAN was a sculptor, or rather a "moulder of figures," and that, when he was pursuing his vocation in the city of York, the subject of this narrative was born on the 6th of July, 1755. When only six months old, the younger John, who was named after his father, was removed to London, together with his brother William, who was afterwards eminent for his skill in carving wood. The elder Flaxman was skilful and industrious in his business: he worked for sculptors who employed him, and likewise kept a shop in the Strand, for the sale of plaster figures.

The younger Flaxman was slightly deformed from his birth, and in his earliest years of a weak and ailing constitution; but his temper was quiet, and his mind enthusiastic. Hence he felt a propensity to shun the society of boys of his own age, and to seek amusements for himself. These amusements were naturally of a mental description. At the counter of his father's shop, he usually sat, during the day, sometimes engaged in reading; at other times in drawing in black chalk. By his grave, but cheerful deportment; by his desire for knowledge, and his love of drawing, he attracted the notice of people who frequented his father's shop. They saw that he was no common child;—that, in these tender years, he took delight in poets, sculptors, and heroes;—that he not only copied figures around him, but that he also referred at once for the antique to Homer, and attempted to think and design for himself.

At the age of from five to seven years he seems to have shown a decided predilection for everything which, in any way, exhibited a sculptured device. He was fond of examining the seals of every watch he saw, and endeavoured to obtain an impression of any one which pleased him. When he was reminded of this, after he had become eminent in his art, he gravely observed that "we are never too young to learn what is useful, or too old to grow wise and good."

In boyhood he was very much noticed and befriended by the Rev. Mr. Mathew, who found in him a natural courtesy and deference to others, such as he evinced towards mankind at large, when, in after days, his fame had spread far and wide. His hours were given to his books and models; and he produced a great number of such models in plaster of Paris, wax, and clay; some of these specimens of inborn talent are still preserved, and have considerable merit. They were, certainly, promises of that genius which he displayed in after years.

By the time he had arrived at the age of ten years, a great change for the better took place in his constitution. He had been hitherto weak and sickly: long fits of illness had repeatedly interrupted his studies, and he had enjoyed little of the air, and exercise, and active sports, which are so common and so salutary to boys of his age. But now health seemed to come upon him all at once: he grew strong, lively, and active, and the crutches were thrown aside, never to be resumed.

We are told by one of his biographers, that the invigorating excitement of health seemed to fill him with a new spirit, and that for a while he could think of nothing but adventures, such as happened to heroes of romance; and he longed for opportunities of showing his generosity and courage. This feeling was produced by the perusal of Don Quixote.—

He was so much delighted with the amiable, though eccentric hero, (writes one of his biographers,) and his account of the duties and honourable perils of knight-errantry, that he thought he could not do better than sally forth to right wrongs, and redress grievances. Accordingly, one morning early, unknown to any one, armed with a little French sword, he set out, without a squire, in search of adventures which he could not find. After wandering about Hyde Park the whole day, without meeting enchanter or distressed damsel, he returned home rather ashamed of his romantic flight, and never again sought to emulate the exploits of him of La Mancha, though he always retained a great admiration of his character.

We are told by Allan Cunningham, the clear spirited writer of the lives of the British artists, that, when health and strength came upon him, Flaxman made up his mind to follow sculpture as a profession. He modelled and drew very assiduously: his father's shop was his only academy, and the antique statues which stood there, imparted to him form and proportion: the serenity of sentiment which they presented, accorded with the emotions of his own mind. Hence, it was particularly painful and mortifying to him to have to encounter the shot of ridicule. In a moment of confidence he showed a drawing of a human eye to a friend:—"Is it an oyster?" inquired the other. This joke made a deep impression upon him, and he resolved to exhibit in future with more care and caution his attempts with the modelling tool and the pencil. His confidence in his own natural abilities was not be dashed by a few light words, and accordingly he had already resolved to attempt something by which his name might be honourably continued to the world.

When he was about ten years old, his mother died, and upon his father's second marriage, he seems to have been fortunate in a step-mother, who showed herself prudent and kind, consulted her husband's interests, and treated his sons with great tenderness. Mr. Mathew, his friend, now introduced him to his wife, a gifted and agreeable woman, and the companion of Mrs. Montague, Mrs. Chapone, and Mrs. Barbauld. In the company of these distinguished ladies he frequently passed his evenings. He was always a welcome visitor, and heard Mrs. Mathew read Homer and Virgil, and discourse upon sculpture and verse. Here he was encouraged in his study of the dead languages, so necessary to him in his profession: thus he learned to think with the authors, and to embody the ideas of the old Greek poets in such a manner as no modern artist has ever yet exceeded. His mode of education was, consequently, of a desultory character; he gathered his knowledge from many sources; and mastered what he was deficient in by some of those ready methods, which seem to form part of the inspiration of genius.

The talent of the sculptor—that which was inlaid in the mind of Flaxman—consisted in the ready ability to personify or embody the characters and descriptions of poetic fancy. Such of his juvenile productions of Homer as still exist, are marked with the quiet loveliness and serene vigour manifested long afterwards in his famous illustrations of the same poet. He now began to obtain praise, and friends arose to foretell his future eminence.

Flaxman became a student in the Royal Academy when he reached his fifteenth year. His artistical distinction hitherto had been greater with the pencil than with the modelling-tool: he was, at first, a better painter than sculptor. In 1770, he exhibited a wax figure of Neptune; and by the time he was twenty years of age, he had sent only ten pieces to the Academy. His success in pictures was so great during these early years, and before the spirit of sculpture completely overshadowed him,—that one of his productions, in oil-colours,—Œdipus and Antigone,—was lately sold by auction for a Belisarius of Dominichino. It seems, in many instances, to have been Flaxman's wish to see how his designs looked in colour, before he modelled them. It is the opinion of Wilkie and other distinguished painters, that such was the practice of the old classic artists they began first to learn to paint, and then to

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work in marble; as painters of the present day frequently model figures before they paint them.

He was now known at the Academy, as an industrious and enthusiastic student, and he began to be spoken of as one from whom much was to be expected. In his fifteenth year he gained the silver medal, and he became, in due time, a candidate for the gold one, the reward of the highest merit. The name of the student who was opposed to him was Engleheart. A subject for modelling was given by the council: the students delivered each his specimen; and the prize—the gold medal—was awarded by the President, Sir Joshua Reynolds, to Engleheart.

By the concurrent testimony of his biographers, the subject of this contest is the only unpleasant, inauspicious part of a narrative of the life of Flaxman: "in no other story," says Cunningham, "has conceit ever been coupled with his name." This seems to be true: for he is reported to have felt ever after great humility in regard to his own merits, and to have looked on his disappointment as a fortunate humbling of a spirit puffed up with pride. But still, we feel bound to consider this subject a little further, with reference both to the competitors, and to the adjudicator of the prize.

When Flaxman gave in his model, (we use his own words,) he believed the medal was his own. He had made up his mind that he was to win, and had even invited some friends to cheer themselves at his table till he should return from the Academy with the prize! He determined, he says afterwards, to redouble his exertions, and to put it, if possible, beyond the power of any one, *to make mistakes* for the future. This alludes to Sir Joshua's decision. His biographers tell us that he thought himself injuriously treated, and that he was incensed at the decision. They then go on to reflect upon the conduct of the president of the Academy, and to accuse him, if not of positive partiality, at least of want of penetration and judgment.

It is the opinion of persons best informed on the subject of education in all its branches, an opinion borne out by the general experience of the world, that a prize, or other scholastic honour, gained in the days of youth, is not necessarily to be taken as the passport of excellence in a man. Such stimulants are useful, as they foster a spirit of industrious excellence. Thus, no one would have known Engleheart, the gainer of the prize, but for the publication of the biography of Flaxman; and all of us have come to know Flaxman, who lost the prize. It might have been, in spite of the biographers, that, at the time, Engleheart surpassed Flaxman; though the latter, by his natural genius and untiring industry, eventually outshone the former. It is only agreeable to human nature, and accordant with self-love, that the adjudication of a prize should leave the unsuccessful discontented, and expose the judge to charges affecting either his head or his heart. There was, perhaps, never a prize awarded in any age or country, where the competitors appeared in the plural number, without raising, and perhaps prolonging, the feelings we have alluded to. All this occurred to our artist between his fifteenth and twentieth year,—a time of life when self-sufficiency is not likely to be corrected by experience.

Soon after this, Flaxman was profitably and agreeably employed in making sketches and models for the pottery of the Wedgewoods. Before this time the porcelain of England had little external beauty to recommend it. The Tuscan vases and the architectural ornaments of Greece, supplied him with the finest shapes: these he embellished with his own inventions; and a taste for elegant forms began to spread over the land. Rude and unseemly shapes were no longer tolerated; the eye grew accustomed to elegance, and desired to have it at the table.

Though he continued at this time to model and sketch for all who employed him, he was by no means as yet distinguished as a worker in marble: so that, when commissioned, about this time, to make a statue of Alexander the Great in marble, he employed another hand to complete the work.

During the ten years preceding his marriage in 1782, he had exhibited about thirteen works at the Royal Academy, including five portraits in wax or in terra-cotta. The others were models of ancient historical subjects: some were terra-cottas and in relief; others were in plaster of Paris; and one in clay. These seem to show, at least, his early pecuniary difficulties; for, if patronage had smiled upon him, the plaster model would have been converted into marble, and his proficiency herein the sooner attained.

While labouring for Wedgewoods, during these years, he produced his celebrated chess models. Occasionally, when his daily task was over, he would work at the bust of a friend; but it was his chief delight to make designs from the poets, from the Bible, and from the *Pilgrim's Progress*.

We have thus passed through the days of the youth of our artist: we will, in our next paper, enter upon the scenes and productions of his manhood.

TATTOOING.

Few of the practices of semi-barbarous tribes are more striking than the mode of ornamenting their skins. It corresponds with the love of finery and extraneous ornament, which is indulged by polished nations; while the ingenuity of the aboriginal decoration, and the elaborate beauty of its figures, are scarcely reconcileable with the crude notions of savage life.

The process of tattooing merits description. It is generally practised in the Pacific Islands; but none are believed to have carried the art of tattooing to so high a degree of perfection as the natives of the Washington Islands. The operation is performed by certain persons who gain their livelihood by its practice; and those who perform it with the greatest dexterity, and evince the best taste in the choice of ornaments, are as much sought after and encouraged as the best tailors are in civilized countries.

The principal strokes or patterns of the figures to be tattooed are first sketched upon the body, with the same dye that is afterwards rubbed into the punctures or piercings, and to make the latter, they use the wing-bone of a tropical bird, which is jagged and pointed at the end like a comb, and of various forms, according to the required figure. This instrument is fixed into a bamboo handle, about the thickness of the finger, with which the puncturer, by means of another cane, strikes so dexterously, that it only pierces through the skin, to allow the blood and lymph to ooze through the orifices, over which is rubbed a thick dye, composed of ashes from the kernel of the burning nut mixed with water. This, at first, occasions slight smarting and inflammation; it then heals, and after a few days the figure appears in bluish-black lines.

In the Washington Islands, many of the natives seek as much to obtain distinction by the symmetry and regularity with which they are tattooed, as the people of more refined nations do by the elegance of dress; and, although no real elevation of rank is designated by the superiority of these decorations, yet, as only persons of rank can afford expensive or elaborate ornaments, it becomes, in fact, a badge of distinction. As soon as a youth of these islands approaches manhood, the operation is commenced, and this is considered a memorable period of his life. In the first year, only the outlines of the principal figures upon the breast, arms, back, and thighs, are laid: some addition is constantly made to them at intervals of from three to six months, and this is sometimes continued for thirty or forty years before the whole tattooing is completed.

The women of the Washington Islands are very little tattooed, differing in this respect from the inhabitants of the other South Sea Islands. The hands are punctured from the ends of the fingers to the wrists, which produces an appearance like that of gloves; on the feet and ancles the tattooing resembles highly-ornamented half boots; and the arms are decorated with long stripes, and with circlets which have the appearance of bracelets worn by European ladies.

The patterns for the tattooer are selected with great care. They consist of sketches of men, birds, dogs, and various

animals; squares, circles, crescents, angles, diamonds, and, in short, of every variety of form. The head of a man is usually tattooed in every part The common ornament for the breast is a shield-like figure, and that for the back is a large cross, beginning at the neck: on each side of the calf of the leg is an oval figure. We may add, that the observer can scarcely fail to be struck with the similarity of effect which exists between the tattooed decorations of the South Sea Islanders, and the armour of the warriors of antiquity.

The tattooing of persons in middle life is performed in houses erected for the purpose, and the expense varies with the number and intricacy of the chosen decorations. A common mode of payment is by hogs; but the poor islanders, who have not a superabundance of swine thus to dispose of luxuriously, but themselves live chiefly upon bread-fruit, are tattooed by novices, who take them at a very low price, as subjects for practice; but their works are easily distinguishable from those of an experienced artist. Among the rich islanders, the addition of ear-ornaments to a female, or a bracelet tattooed about her arms, is often the occasion of a joyous feast.

In New Zealand the art of tattooing has been brought to great perfection, and is as much admired as superb clothing. When a chief throws off his mats, he seems as proud of displaying the beautiful ornaments figured on his skin, as any civilized votary of fashion is in displaying himself in his last modish attire. Tattooing is likewise as essential a part of warlike preparations in New Zealand as are the accoutrements of an European soldier. Mr. Earle describes a whole district thus preparing, and an ingenious artist engaged to tattoo the warriors. He was considered by his countrymen a perfect master of his art, and men of the highest rank and importance were accustomed to make long journeys to put their skin under his hands. A highly finished face of a chief, tattooed by this artist, is as greatly prized in New Zealand as a head from the hands of a celebrated painter is among us; and a warrior, having killed a chief whom this artist had tattooed, appreciated the work so highly, that he skinned the chieftain's thighs, and covered his cartouch-box with it.

POISONOUS ARTICLES OF FOOD.

III

POISONOUS HONEY.

HONEY would seem to vary much in its nature and the effects it produces on the animal economy, according to the description of flowers whence it is procured. Delicious in its taste, and usually harmless in its effects, it has been found in various parts of the world to possess poisonous qualities. Mr. Abbot, writing to the Zoological Society from Trebizond, says, that he has there seen the identical symptoms produced by eating the honey, procured by the bees from the odorous *Azalea pontica*, which were described by Xenophon and Diodorus Siculus as affecting those of the army of the Ten Thousand, who ate the honey in the fields during the siege of Trebizond. The persons so affected act just like men inebriated by strong drink. Dr. Barton states, that after the removal of several hives from Pennsylvania to the savannahs of New Jersey, where the *kalmia* was the principal flowering shrub, the bees themselves throve exceedingly well, but that every one who partook of their honey became as if intoxicated, and seized with dim vision, vertigo, and delirium, followed in a few cases by death. Aristotle, Pliny, and Dioscorides, mention that at certain times of the year, the honey in the neighbourhood of the Caucasus becomes poisonous. Tournefort says, that a constant tradition has prevailed along the coasts of the Black Sea, that the honey collected from the azalea is dangerous; and Guldenstaedt, the companion of Pallas, says the honey thence derived is dark and bitterish, and produces insensibility. Roulox Borro, in his voyage to the Brazils, mentions that the Tapuies make an intoxicating beverage, called *grappe*, from wild honey. Seringe relates, that Swiss herds having eaten of honey procured from the wolfsbane, were convulsed and delirious. M. Augustus de St.-Hilaire gives an interesting account of the escape of himself and companions from the effects of the honey of the Lecheguana wasp, of which they had eaten in the Brazils: he says, there are two species of honey produced by it, one white and harmless, another dark and frequently deleterious.

POISONOUS GRAIN.

WHEAT is sometimes rendered black by disease of the ears, when it is said to cause cholic and other diseases, if made into bread; and the same effects are said to result in various parts of France, when unpropitious weather compels the farmer to cut his wheat before it is entirely ripe: the wheat which is cut in this country before ripening, does not however produce similar effects. Corn has more frequently been rendered hurtful by the accidental admixture with it of some of the seeds of the darnel grass (*Lolium tremulentum*), the only poisonous species of the natural order of the grasses. Several years ago, eighty persons were seized with alarming symptoms in the Sheffield work-house, from having breakfasted upon oatmeal porridge, contaminated by this herb. A similar accident took place at the house of correction at Freyburg

SPURRED RYE.

RYE has produced the most unquestionable and highly poisonous effects. Triflingly as it enters into the articles of consumption of the people of this country, little is known here practically about the diseases it engenders, but the accounts we have of the various severe epidemics which have prevailed in France and Germany from its use, supply us with abundant information. In its natural state rye furnishes an useful article of food, though of a very inferior nourishing power compared to wheat, but it becomes by disease converted into a blackened substance termed ergot, or spur of rye, which, when used in small quantities, forms a valuable medicine, but when entering into the composition of bread proves a dangerous poison. The production of the ergot or spur of rye (*Secale cornutum*), has been referred to various causes: some suppose it to consist in a diseased state of the juices of the plant; De Candolle believes it caused by the growth of a parasitic mushroom of the genus *Sclerotium*, while the majority of observers assert, that it is the production of an insect. This last opinion has been confirmed by the observations of General Field, of Vermont, who has seen small flies puncturing the ear of the rye, while in a milky state: he imitated the process himself in other instances with a needle, and the black spur was gradually formed.

Epidemics arising from the admixture of this spurred with good rye, have occurred at various periods in Europe, and although some of these have been attributed rather to the famines caused by poverty and misery, yet there is ample evidence to show that the rye, on many occasions, has been instrumental in producing them; while direct experiments have at the same time shown its poisonous effects upon the lower animals. From the symptoms which the imperfect records of the time detail, it is very probable that many of the epidemic visitations of the tenth and eleventh centuries, known in France under the names of St. Anthony's Fire, the Sacred Fire, and the "Mal des Ardens," were produced by this grain; but the earliest positive accounts we have, relate to an epidemic which occurred in 1596, in Saxony. There are numerous records of similar occurrences from time to time, during and after the seventeenth century, in France, Siberia, Denmark, Sweden, and Lombardy, and in 1661 the disease appeared in England. Towards the end of last century, in consequence of the investigations which the various states instituted into the subject, and of the improved conditions of the lower orders, the epidemic attacks of Ergotisme (as it is called by the French) became much less frequent and less severe, yet have several visitations occurred even during the present century in France and Germany. The rye chiefly becomes spurred in wet seasons, and in moist clayey soils,

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and thus the district of Sologne, situated between the rivers Loire and Cher, is found to be the portion of France by far the most frequently affected. The Abbé Tessier, who in 1777 made a careful investigation of the subject, found that a forty-eighth part of the thrashed corn was ergotized, and that in bad seasons the proportion mounted up to one-third or one-fourth of the whole quantity. Similar observations as to the localities favourable to its production have been made in Germany, and Wildenow says, this diseased state of the rye may at any time be induced by sowing the corn in rich damp soil, and watering the plants profusely in warm weather.

It is not our intention to describe minutely the symptoms which result from the use of spurred rye, but we may notice the curious fact that they vary so much in different epidemics, that the French writers denote them under two distinctive appellations, namely, Convulsive Ergotism, and Gangrenous Ergotism,—in the first, a great disposition to convulsive and spasmodic diseases manifests itself; in the latter, various parts of the bodies of those who eat the bread containing the damaged rye, are destroyed by gangrene or mortification, from which cause these unhappy victims frequently lose a hand, a foot, or the nose. In Germany, the disease is popularly termed "the creeping sickness."

Maize or Indian corn is said to be liable to a similar disease in Columbia, and while in that state, produces a loss of hair and teeth of those who partake of it.—J. C.

THE ICHNEUMON.

The little animal we are about to describe was well known to the ancients, and much celebrated in their fables. It was held in such high estimation by the Egyptians that funds were set apart for its support; it was tended with great solicitude, and fish, bread, and milk were supplied to it as food. It was also a forbidden thing to kill it; and, on its death, honours were paid to it, as to an object of worship. Elian, and other ancient writers, celebrate the combats of the ichneumon and the aspis: Pliny describes its stratagems against the crocodile, and it is on account of the reputation it has for diminishing the numbers of these formidable creatures, that the ichneumon has gained so much celebrity. According to the statements of the above writers, the ichneumon had the sagacity to arm itself, previous to the battle, with a coating of mud. If mud were not at hand, it bathed itself in water, and then rolled itself in the sand, and as the nostrils were the most vulnerable part, it took care to cover them by the sinuosities of its tail. Aristotle still further vaunts the wisdom of the ichneumon by stating that it never goes to battle without first summoning its friends and allies. Pliny relates the stratagem it employs against the aspis as we give it from *Holland*:—

Now when he is lulled as if were fast asleepe with this pleasure and contentment of his, the rat of India, or ichneumon, spieth his advantage, and seeing him lie thus broad gaping, whippeth into his mouth, and shooteth himself downe his throat as quicke as an arrow, and then gnaweth his bowels, eateth a hole through his body and so killeth him.

It is difficult to account for the above extravagant notions of this animal, for there is nothing in its character or habits, as at present described by naturalists, that can warrant them. The ichneumon is diminutive in size, timid in disposition, and has neither the courage nor the power to attack serpents or crocodiles, whether they be asleep or awake. It is fond of mice, rats, small birds, &c., and is particularly destructive to eggs. In this way it is of great service; for by feeding on the eggs of crocodiles, serpents, and the larger kind of lizards, it reduces the numbers of these formidable creatures. At the close of day, it glides through the ridges and inequalities of the soil, and shows much prudence in searching after its prey, and in endeavouring at the same time to evade danger. It possesses great perseverance, and will remain for hours in the same place, attentively watching for the animal it has marked out as its prey. When it has made its way into some unknown spot it immediately explores every hole and corner, and its chief power of research seems to lie in its sense of smell, which is uncommonly powerful and acute; the other senses appear comparatively feeble. Cuvier thus notices the animal, which he places with the civets, and the genets, intermediate between foxes and hyænas in the system.

The *mangouste* of Egypt, so celebrated under the name ichneumon, (*Viverra ichneumon*, Linn.)

Grey, with a long tail terminated by a black tuft, larger than our cats, as slender as our martens. It searches peculiarly for the eggs of crocodiles, but also subsists on all kinds of small animals. Domesticated in houses, it hunts mice, reptiles, &c. The Europeans at Cairo call it *Pharoah's rat;* the people of the country, *Nems*. What the ancients related of its jumping down the throat of the crocodile to put it to death is fabulous.

Hasselquist, speaking of the ichneumon of the Nile, says that it is met with in Upper and Lower Egypt living during the inundations of the Nile in gardens and near the villages, but in the dry season dwelling in the fields and near the banks of the river. It creeps slowly along, as if ready to seize its prey, and feeds on plants, eggs, and fowls, killing the latter in the night, when it frequents the villages. He mentions likewise its services in Upper Egypt in searching out the crocodiles' eggs that lie hid in the sand, and devouring them.

The execution committed by the ichneumon among young animals may be judged of by the fact, that when a dozen full-grown rats were turned into a room in the Tower of London, sixteen feet square, with one of these animals, the ichneumon killed them all in less than a minute and a half.

The haunts and habits of the members of this subgenus are nearly all alike. Wherever they abound, the country is subject to periodical overflowings of water, and a consequent abundance of aquatic animals; so that the office of the ichneumon in the economy of nature seems to be the keeping of such animals within due bounds by preying on their eggs. From M. F. Cuvier we have a description of an ichneumon, brought from the peninsula of Malacca, and from Dr. Horsfield an account of the ichneumon of Java. Of these two species, therefore, we proceed to give a brief notice.

The mangouste, or ichneumon of Malacca, is rather more than a foot in length, the tail about a foot, and the height at the most elevated point of the back five inches and a half. Owing to a peculiar faculty which it possesses of elongating or shortening the body by some inches, it is a difficult matter to measure it correctly. The colour of this animal is a dirty grey, resulting from a succession of black and whitish yellow rings which cover the hairs; the circumference of the eye, the ear

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and the extremity of the muzzle are naked, and of a violet colour; the tail is the same colour as the body, very thick at the root, and terminating in a point with yellowish hairs. This ichneumon, though extremely tame, permitting itself to be handled, and taking pleasure in caresses, grew extremely ferocious at sight of those little animals which constitute its prey. It was particularly fond of birds, and when they were put into a large cage, it would spring forward with a rapidity that the eye could not follow, seize them, break their heads, and then devour them with the utmost voracity; as soon as its appetite was satisfied, it would lie down in the most obscure corner of its retreat. When irritated the hairs of its tail would bristle up. Its cleanliness was remarkable.

These little animals are said to inhabit holes in the walls, or burrows in the vicinity of habitations, and to perform much the same part in India that weasels and polecats do among ourselves, destroying great numbers of young animals and committing much devastation.

The mangouste, or ichneumon of Java, differs but slightly from that of Malacca. It is somewhat larger, and its fur is a mixture of black and brown instead of black and white. It is known in Java by the name of garangan, and is found there most abundantly in the large teak forests; its agility is greatly admired by the natives; it is reported among them that it will attack and kill serpents, and that when the snake involves it in its folds the ichneumon inflates its body to a considerable degree, and when the reptile is about to bite, again contracts, slips from between the folds, and seizes the snake by the neck.

It is very expert in burrowing in the ground, which process it employs ingeniously in the pursuit of rats: it possesses great natural sagacity, and from the peculiarities of its character willingly seeks the protection of man: it is easily tamed, and in a domestic state is docile, becomes attached to its master, and follows him like a dog; it frequently places itself erect on its hind legs, regarding every thing which passes with the greatest attention; it is of a very restless disposition, and always carries its food to a very retired place in order to consume it, and if it is disturbed there, it exhibits great anger. One of the principal articles of food among the Javanese is the common fowl; and as the ichneumon is very artful in surprising and catching young chickens, it is not to the interest of the people to keep it in the domestic state. They are likewise very fond of cats, and are unwilling in most cases to be deprived of their society for the sake of introducing the ichneumon

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A MOTHER'S LOVE.

THE bird may leave its nestled young,
The sun may cease to shine above,
Man may forget his native tongue,
But who can change a mother's love!

The flowerets may withhold their bloom,
And gentleness forsake the dove;
Man may forget the blighting tomb,
But changeless is a mother's love.

EVERY one admits that the mind, and moral faculties, are to be developed and strengthened, and made to do the best, by exercise. This is equally true of physical power. Every action which it can be proper to do at all, ought to be done in the best way; otherwise the end of being is not answered. In the vegetable and animal departments, all proper care and cultivation tend to use and beauty. Is there any reason why the physical powers of man should not have care and cultivation to the same ends? Those who prefer a stooping, lounging, awkward, graceless, figure and motion, may be on one side of the question; those who think that it was intended that man should be an upright, easy, frank, comely, and convenient being to himself, and pleasant to all within whose observation he may come, will be on the other.—S.

USE OF TEA IN VARIOUS COUNTRIES.

THE plants employed as tea in different countries do not resemble each other so much as their general denomination might lead the reader to imagine. Their external varieties are, however, exceeded by the modes of making beverage from them: for, it is curious to observe, that in scarcely any two countries where tea is drunk, is it prepared precisely in the same manner. That of China approaches nearest to the fashion of our own country.

The Emperor Kien-long, the royal poet of China, composed an ode eulogising tea. He first describes the mode of drawing tea, which, when divested of his peculiar and methodical phraseology, is nearly the same as our own. "On a slow fire," he says, "set a tripod, whose colour and texture show its long use. Fill it with clear snow water. Boil it as long as would be sufficient to turn fish white and crayfish red. Throw it upon the delicate leaves of choice tea. Let it remain as long as the vapour rises in a cloud, and leaves only a thin mist floating on the surface. At your ease drink this precious liquor, which will chase away the five causes of sorrow. We can taste and feel, but not describe the state of repose produced by a liquor thus prepared." The Chinese, however, drink their tea simply, without the addition of sugar or milk. The common people, who have a coarser tea, boil it for some time in water, and make use of the liquor for usual drink. Early in the morning the kettle, filled with water, is regularly hung over the fire for this purpose, and the tea is either put into the kettle, inclosed in a bag, or by means of a basket pressed to the bottom of the vessel, that there may not be any hindrance in drawing off the water. The Bantsjaa tea only is used in this manner; its virtues, being more fixed, would not be so fully extracted by infusion.

One mode of using tea, among the higher ranks in China, is by grating into the cup, balls made of the most valuable leaves, cemented together by some kind of tasteless gum.

Neither the Chinese, nor natives of Japan, ever use tea before it has been kept at least a year; because, when fresh, it is said to prove narcotic, and to disorder the senses. The Japanese reduce the tea into a fine powder, by grinding the leaves in a handmill; they then mix them with hot water into a thin pulp, in which form it is sipped, especially by the nobility and wealthy persons. It is made and served up to company in the following manner:—the tea-table furniture, with the powdered tea inclosed in a box, are set before the company; the cups are then filled with hot water, and a small quantity of the powder is taken out of the box, put into each cup, and then stirred together with a curious notched instrument till the liquor foams, in which state it is handed to the company, and sipped while warm. Du Halde states this method to be used in some provinces of China, as well as in Japan. To make tea, and to serve it in a genteel and graceful manner, is an accomplishment, in which persons of both sexes in Japan are instructed by masters, in the same manner as Europeans are in dancing, and other branches of polite education.

Tea is also the common beverage of all the labouring people in China, one scarcely ever sees them represented at work of any kind, but the tea-pot and tea-cup appear as their accompaniments. Reapers, threshers, and all who work out of, as well as within, doors, have their attendants. In public roads, and in all places of much resort in Japan, and even in the midst of fields and frequented woods, tea-booths are erected; as most travellers drink scarcely any other beverage on the road.

The tea drunk by the working people in China, however, must not only be of an inferior class, but very weak; as the native attendants on Lord Macartney's embassy were continually begging the refuse leaves, which had been already used by the English, so that they might pour fresh water over them, and thus obtain

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a better beverage than they usually enjoyed. On the other hand, some tea presented by the Emperor Kien Long to Lord Macartney, was found to want somewhat of the astringency which the British tea-drinker values in the infusion.

Thrice at least in the day, every Chinese drinks tea, but all who possess the means enjoy the refreshing beverage oftener: it is a constant offering to a guest, and forms a portion of every sacrifice to their idols.

Mr. Ellis, in an account of one of Lord Amherst's visits of ceremony to Kwang, a mandarin of high rank, says, "The tea served round was that only used on occasions of ceremony, called Yu-tien: it was a small leafed highly-flavoured green tea. In Lord Amherst's and Kwang's cups there was a thin perforated silver plate, to keep the leaves down, and let the infusion pass through. The cups used by the mandarins of rank, in form, resemble coffee cups, and are placed in a wooden or metal saucer, shaped like the Chinese boats."

Tea has long been common in SOUTH AMERICA, and is grown in large quantities in Paraguay, the tree called Yerva Mate, being nearly peculiar to that district. We find, in the beginning of the seventeenth century, that this plant was in general use; and there can be no doubt but the Indians taught it to the Paraguayans. The quantity used by a person who is fond of this tea is an ounce. In Paraguay, La Plata, Peru, and Quito, it is made at all hours of the day, by putting a handful into a tea-pot, from the spout of which, the hot liquid is drunk; some mix sugar with it, and others add a few drops of lemon-juice. Five millions of pounds are annually obtained from Paraguay, half of which is sent to Chili, whence Lima and Quito are supplied: the rest is consumed in the viceroyalty of Buenos Ayres. The people of South America attribute innumerable virtues to this plant: it is certainly aperient and diuretic; but the other qualities ascribed to it are doubtful. Like opium, it produces some singular and opposite effects; it gives sleep to the restless, and spirit to the torpid. Those who have once contracted the habit of drinking it, do not find it easy to discontinue its use, or even to drink it in moderation; though when taken to excess, it brings on similar disorders to those which are produced by the immoderate use of strong liquor.

Dr. Walsh, in his *Notices of Brazil*, describes what is by some considered another plant, named the conhonga, which is used universally as tea. It grows in marshy places, and resembles an orange tree: the leaves are dried, or rather, roasted on twigs before the fire, where they crackle like cannel, and are then reduced nearly to powder, and kept in pots. Dr. Walsh drank this tea prepared in three different ways: either an infusion of fresh leaves, or made with the dried leaves like China tea, or boiled with sugar, and then drained off. The clear infusion resembles that of common green-tea, but has neither its flavour, odour, nor refreshing qualities.

Brick tea is much used by the Mongols, and most of the people of Middle Asia: it serves them both for food and drink. The Chinese carry on a great trade in this kind of tea, but never drink it themselves. It consists of the dry, dirty, and rejected leaves and stalks of the tea, which are mixed with a glutinous substance, pressed into moulds, and dried in ovens: these blocks being called, on account of their shape, brick tea. The mode of using it is, to pound a piece in a mortar made for the purpose, and throw the powder into a cast-iron vessel full of boiling water, which is suffered to stand a long time over the fire, during which salt and milk, and sometimes flour fried in oil, are added. This tea, or broth, is called Satouran, and is believed to be very nourishing.

Throughout the continent of Europe, tea is comparatively but little used, coffee being the almost universal beverage as a luxury, or necessary of life. In Germany, tea is so seldom drank, that it acts like a medicine when taken by a native; and, in that country, persons have been known to decline a cup of good bohea, with the excuse, "No, I thank you; I am quite well at present." In Bavaria. it is the practice to flavour the tea with a few slices of lemon, so that it resembles bad lemonade. Even in France, the making of tea is but ill understood or managed; and in Great Britain only, in Europe, can this beverage be drunk in perfection. Nevertheless the tea purchased on the Continent is, generally speaking, both good and cheap. The Russians are fastidious in tea-making and tea-drinking, and understand both arts fully as well as, if not better than, the English. Their tea-urn is quite a piece of machinery. The perfume and stimulant qualities of their best sort of tea is said to have a distressing effect upon the nerves. The teas used in St. Petersburgh, reach that market direct from from China overland; and it is presumed that from the circumstance of its not travelling by sea, the Russian tea retains all its bloom and strength, which the English tea loses during a long sea-voyage; but this does not appear probable.

The mode of making tea in England is too well known to need description; but a few notices of its introduction may be more acceptable. From a single sheet found in Sir Hans Sloane's Library, in the British Museum, it appears that tea was known in England, in the year 1657, though not then in general use. The writer of this paper says, "that the vertues and excellencies of this leaf and drink are many and great, is evident and manifest by the high esteem and use of it, (especially of late years,) among the physicians and knowing men in France, Italy, Holland, and other parts of Christendom; and, in England, it hath been sold in the leaf for six pounds, and sometimes for ten pounds the pound weight; and in respect of its former scarceness and dearness, it hath been only used as a regalia in high treatments and entertainments, and presents made thereof to princes and grandees, till the year 1657."

Mr Samuel Pepys, Secretary to the Admiralty, in his *Diary*, makes the following entry: "Sept. 25, 1660. I did send for a cup of tea (a China drink,) of which I never had drunk before, and went away;" but the writer does not say where he had his drink. In 1662, tea appears in an advertisement of a coffee house, in Exchange Alley; which refutes the commonly received statement that it was first brought into this country from Holland, by Lord Arlington, in the year 1666. In a letter from Mr. Henry Savill, from Paris, dated August 12, 1678, the writer refers to "friends who call for tea, instead of pipes and bottles after dinner; a base unworthy Indian practice, (adds he,) the truth is, all nations have grown so wicked as to have some of their filthy customs."

In 1678, the year in which the above letter is dated, the East India Company began the importation of tea as a branch of trade, the quantity received at that time amounting to 4713 pounds. The trade did not, however, considerably increase during the early part of the eighteenth century, for the importation between the years 1700 and 1710, amounted to less than 800,000 pounds. It was still a scarce luxury, confined to the wealthy: it was made in small pots of the most costly China, holding not more than half a pint, and drunk out of cups, which held little more than a table-spoon. In the century between 1710 and 1810, the teas imported into this country, amounted to upwards of 750,000,000 pounds; between 1810 and 1828, the total importation exceeded 427,000,000 pounds, averaging 23,000,000 and 24,000,000 a year; and, in 1831, the quantity imported was 26,043,223 pounds.

The uses of tea, as a beverage, were at first so little understood in England, that instances are related of the herb having been served at table as a vegetable, with a sauce of melted butter, the water in which it was boiled being thrown away as useless.

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The beneficial results of the introduction of tea and coffee, have been strangely overlooked or underrated. It has been, however, well described as leading "to the most wonderful change that ever took place in the diet of modern civilized nations,—a change highly important both in a moral and physical point of view. These beverages have the admirable advantage of affording stimulus without producing intoxication, or any of its evil consequences. Lovers of tea and coffee are, in fact, rarely drinkers; and hence the use of these beverages has benefited both manners and morals *."

* MACCULLOCH, *in Dict. Commerce.*

CHINESE FUNERALS.

THE funeral ceremonies of the Chinese have many interesting peculiarities, which are highly descriptive of the manners and customs of this extraordinary people. They keep dead bodies above ground for a very long time: the rich delay the funeral even for a year, or longer, the time denoting their degree of respect and reverence for the deceased. When the body lies in state, it is placed in the largest room of the house, entirely hung round with white, which is the Chinese colour for mourning. The coffin is ornamented with painting and gilding, and is made during the life-time of the deceased: indeed it is the practice of the poorest Chinese to reserve a sufficient sum to secure a reputable shelter for their lifeless bodies.

On the day of the funeral the relations walk in procession to the grave. The corpse is preceded by musicians, playing melancholy airs upon various instruments, and by persons bearing painted scrolls and silken banners, on which are inscriptions indicative of the rank and character of the deceased. Incense-bearers follow these; and then, under a white canopy, the coffin, covered with a white pall, is borne by men. Upon each side of it are persons employed in burning pieces of paper and pasteboard, with inscriptions upon them: some are circular, and some are cut into fantastic figures, all which, it is believed, are wafted upwards with the soul, and accompany it in its next state of existence, either as coin, bread, or whatever else the inscription denotes. After the corpse come the relatives of the deceased, in white clothes, which are soiled, dirty, and unornamented; or, the eldest son, wearing a canvass frock, having his body bent, and leaning on a staff, follows near the coffin; behind him are his brothers, in couples, leaning on crutches, as if unable to support themselves. In some funerals, every mourner has a friend, or supporter, on each side, and a servant bearing over him a huge umbrella with a deep white fringe, which nearly screens the mourner from the public gaze. If women follow, they are borne in small coaches similar to our sedans. The procession is closed by the friends of the deceased. The mourners often howl and shriek most vehemently, and fill the air with their loud lamentations.

The burial-places are erected in the usual shape of grottoes, without the towns. They are divided into small cells, in each of which a coffin is laid, and as soon as the cells are filled, the sepulchre is closed. No religious service takes place; the coffin is deposited in its receptacle with great solemnity, and the procession returns. At a short distance from the tomb are halls, where tables are spread with provisions for the mourners and attendants. If the deceased were a grandee of the empire, his relations do not leave the tomb for a month or two, but reside in apartments prepared for them, and renew their respects to the dead daily. The magnificence of these funerals, of course, varies with the rank of the deceased. That of one of the emperor's brothers was attended by upwards of sixteen thousand persons.

Distinguished persons are generally buried in mountains and solitary places; and if the tomb be erected in a valley or plain, a large heap of earth is raised over it and covered with white plaister. In the vault, an altar is built, whereon are placed meats, incense, lighted tapers, and figures of slaves and animals, which are believed to be of service to the dead in another world.

If the deceased held any important office, his most virtuous actions are sculptured on marble and fixed up in front of the tomb, about which also are ranged figures of officers, eunuchs, horses, stags, camels, lions, and elephants. About the tomb are planted cypress-trees, which add to the solemnity and gloom of the scene.

Other means, beside the erection of tombs, are taken to perpetuate the virtues of the great. Each family of respectability has erected on its estate a large building called the *Hall of Ancestors*, against the wall of which is placed a table which bears the figures of the most distinguished ancestors; or the names of the family, with their ages and dignities, are merely inscribed on tablets.

The Chinese have likewise periodical ceremonies to cherish the memory of the dead. In spring, the relations assemble at the family hall, where the wealthiest of them prepare a banquet; but none of the viands are touched till an offering has been made with due solemnity. The poorer classes, who have no hall wherein to honour their ancestors, place the names of the deceased in the most frequented part of their houses.

The Chinese likewise consider it an imperious duty to visit the tombs of their ancestors once or twice a-year, when they pluck away the weeds from about the grave, and place wine and provisions upon the tomb, whilst others freshen, with paints of different colours, the characters of the epitaphs.

No corpse is allowed to enter the gates of Pekin without an imperial order, because it is said a rebel entered in a coffin in the reign of Kienlung. However, even at Canton, and in all other cities of the empire, no corpse is permitted to enter the southern gate, because the emperor of China ascends his throne with his face towards the south.

THE SMOKE-JACK AND THE SMOKE, A FABLE.

THERE was a nobleman who had much money and built a fine house, and, being fond of company, he made a large kitchen, which was fitted up with a spacious fire-place, an excellent smoke-jack, and every thing else that could tend to make the department perfect. Dinner parties followed in quick succession, and the feasting gave universal satisfaction. Each day as the spits were taken from the fire, the praises and mutual congratulations of the cooks, at the admirable roasting of the joints, ascended in grateful accents to the ears of the smoke-jack; and as it so happened that the kitchen chimney passed up the wall of the dining-room, the pleasing strain was continued by the approbation overheard from the guests as each haunch of venison, or sirloin of beef, or Norfolk turkey, graced the table. Praises often repeated will make the best of us giddy, and the heads of smoke jacks have proverbially a tendency to turn round! so was the result with the jack, the hero of this fable. Elated by the applauses which greeted him, he exclaimed with impassioned energy, "How great is my influence and how extensive my powers of pleasing! not only do I excite the admiration of the menials below, but I enable my noble master to exercise his hospitality and call forth the lavish commendations of the illustrious friends who throng his table! mine would be a great and enviable position were it not for this filthy smoke, which is constantly puffing in my face and covering me with blacks and soot! I will allow it no longer; therefore, smoke! I warn you off my premises immediately."

The poor smoke, checked by this repulse, meekly changed his current and curling up the opposite side of the chimney was soon lost among the clouds and vapours of the sky. For the next day a large dinner party was invited, but who can describe the consternation of the poor cooks when preparing for the feast, they found the smoke-jack immoveable! jerking, poking, shaking, oiling, proved alike in vain. My lord was complained to, a smith was summoned, and the jack, being pronounced useless, was quickly taken down and sold for old iron.

But even iron, old and rusty though it be, may yield a moral for our use; it may teach the rich and great, that their power, however vast, is not independent of the humbler beings by whom they are surrounded. They may dread contamination and renounce their fellowship, but if the working current of the poor be withdrawn, the power of the rich, must, like the smoke-jack, stop, and lacking means to call it into action, its influence must cease. This reflection may excite a sense of pride in the poor man's mind, but let him not forget, that when the smoke had quitted the alliance and the guidance of the jack, he was left to follow a course through which impurity marked his progress to an unprofitable end.

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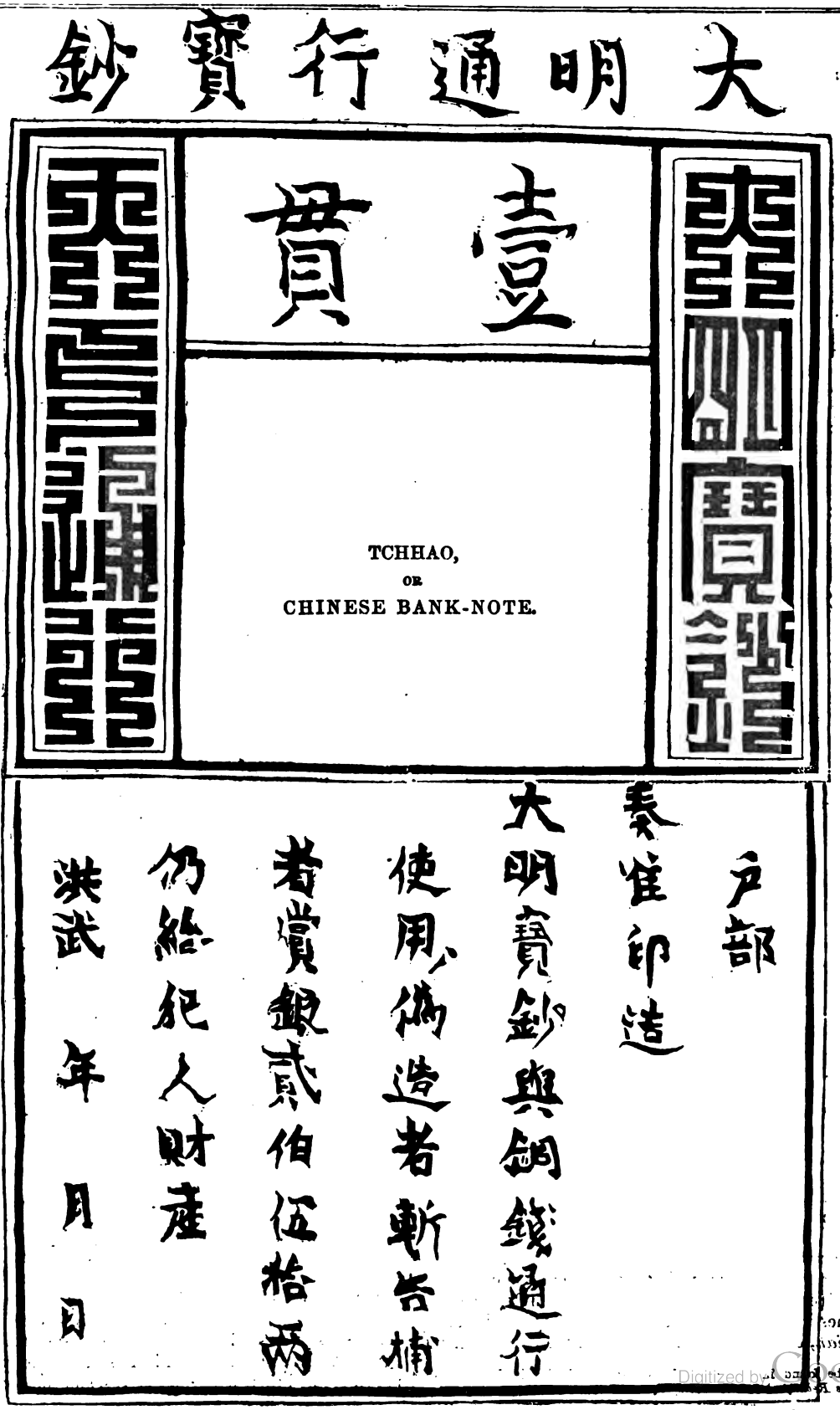

TCHHAO,
OR
CHINESE BANK-NOTE.

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THE CHINESE INVENTORS OF BANK-NOTES.

IT is well understood, that the Chinese discovered the properties of the magnet; that they not only invented writing materials, but the art of printing; and were the first to manufacture silk, porcelain, and gunpowder. But it is not so well known that they were the original contrivers of a paper currency.

The most striking trait in the general character of the Chinese is their aversion to every sort of improvement or *progress*. They believe that their social, moral, and political institutions, are perfect; and their laws absolutely forbid the least alteration. Thus it is that, though the Chinese were the first to use a mariner's compass, they are ignorant of navigation: though they invented gunpowder, they prefer bows and arrows to guns; and lastly, although the invention of paper-money has been traced to them, their commercial dealings possess none of those facilities which a paper currency affords.

Most authorities, when consulted as to who were the inventors of paper-money? answer the Mongols. This is a mistake, arising from a passage of the celebrated Venetian traveller, Marco Polo, who first made known to Europe the existence of credit-papers, which were used in his time by the Mongols, the then masters of China. These people afterwards introduced a representative currency into Persia, where it was extensively employed in the thirteenth and fourteenth centuries.

The error of attributing to the Mongols what really belongs to the Chinese is one of those misapprehensions which an advanced knowledge of the Chinese language, and the industry of M. Klaproth, have effectually removed. That learned orientalist, in a paper addressed to the Asiatic Society of Paris*, has furnished—from several of the elaborate native historical works with which China abounds—some very interesting particulars concerning the origin of paper-money, which fixes the invention of it upon the Chinese.

It appears that for *four centuries and a half* before the time at which modern historians usually date the invention of paper-money, a species of nominal currency was in use among the Chinese, namely, in the year 119 B.C. The native annals of that date contain the most ancient record of a financial speculation ever yet discovered. During the reign of *Ou-ti*, an emperor of the Han dynasty, the expenses of the state outran the imperial revenues; to make up this deficiency, the minister of Ou-ti caused the skins of certain white stags that were fed in the imperial park to be cut up into pieces a foot square, ornamented with paintings and inscriptions, and issued as a currency: each skin passing for 40,000 deniers, or about 12*l.* 10*s.* They were called *phi-pi*, or "value in skins;" but only circulated among the courtiers and grandees of the empire. Whoever was invited to the repasts and ceremonies at the palace was obliged to cover the tablet they held before the face, in presence of the emperor, with one of these *phi-pi*.

But the first instance of a regular paper-currency occurs in the history of the reign of Hian-tsoung, of the *Thang* dynasty of Chinese monarchs, towards A.D. 807. The preceding reigns had been marked by the utmost anarchy and confusion, so that the regular currency was so much neglected that all sorts of things were used for money; such as small round pieces of iron, clothes cut up, and even pasteboard. Copper coins having become exceedingly scarce, Hian-tsoung forbad any kind of utensil to be made of that metal, and obliged all merchants visiting the capital, and certain rich native families, to contribute to the public coffers. For these contributions, bills were exchanged called *-thsian*, or "voluntary money." In the year 960 A.D., a new kind of note was issued, derived from the privilege granted to merchants to deposit their goods in the various public treasuries; precisely, it would appear, upon the principle of pawnbroking as at present practised. In acknowledgment of the deposit of their wares, the merchants received a paper answering to the "duplicate," which was called *pian-thsian*, or "accommodation money," and negociable; being received everywhere with eagerness.

The two last-mentioned notes were manufactured of such paper as was in general use among the Chinese at the period; namely, that derived from the bark of a species of mulberry-tree, known to the natives as the *tchu*, and to naturalists as the *Morus papyrifera*. The notes were of a large size, being, like the *phi-pi*, a foot square; their current value was legibly printed on them, and an official seal was also attached.

These securities can hardly be called a nominal currency, because an intrinsic value equal to the sum they represented was deposited in the public treasuries; and it was not till between the years 997 and 1022 that a true system of artificially representing wealth was introduced. At that time, China proper was divided into several separate states: the large province now known as *Szu-tchuen* was one of these, and called the Kingdom of Chon. Here a certain *Tchang-young* introduced a credit-paper called *tchi-tsi*, or "cheques," to replace the iron-money then in use, which was heavy and inconvenient. Out of these a new system of credit-currency arose, and to which may be traced the origin of bills of exchange; for the "cheques" were succeeded by *kiao-tsu* or "changes," which bore a date and were payable every three years: thus in sixty-five years there necessarily occurred twenty-two "changes" or terms of payment. A regular banking system may now be said to have commenced. The monarch deputed sixteen of the most opulent merchants to superintend the new currency, and these actually became bankers. This company failed, and the sovereign, *Tchang-yang*, was obliged to take the whole affair into his own hands, which he did by establishing a bank of issue at Y-tchéon. The *kiao-tsu* was equivalent in value to 1000 deniers, or an ounce of pure silver. We subjoin a drawing of a Chinese "cash," the modern denier. The *kiao-tsu* were of the same manufacture and appearance as the former notes; only their dates of issue and expiration were in all probability printed in addition to the amount they represented.

Forgeries first make their appearance in Chinese history in 1068, for spurious *kiao-tsu* were then found to be in circulation. Though this was a new offence not contemplated by the unalterable Chinese statutes, the innovation of a *new* law was not attempted to provide against it; but the punishment denounced against those who counterfeited the imperial seal was also made the reward of forging bank-notes. By the commencement of the twelfth century, a banking system had spread itself all over China, and there was scarcely a province without its bank and its paper "changes;" but the notes of one district were not current in another. The terms of payment and modes of circulation were frequently changed.

Under the Emperor *Kao-tsoung*, (of the Soung dynasty,) the Hon-pon, or minister of the treasury, hit upon the expedient of paying some of the public creditors in a new security; but this not succeeding, another was tried in 1160, called *hoei-tsu* or "contracts," of 1000 deniers value; and, in 1163, under *Hiao-tsoung*, others were issued for the several sums of 500, 300, and 200 deniers; so that in 1166 the existing issue amounted to 28,000,000 ounces of silver! Besides these, particular provinces had their particular issues, and the country was

* To be found in the *Journal Asiatique*, and also in KLAPROTH'S *Mémoires Relatifs à l'Asie*.

inundated with paper-money. The value of each note deteriorated from day to day; and, despite a new security was made, called *yu-kouan* or "money-bonds," and many expedients to lessen the national embarrassments occasioned by the glut of paper-money, the Mongols, who put an end to the Soung native dynasty in the latter half of the thirteenth century, found the monetary affairs of their new subjects in the utmost confusion.

By these statements, the Chinese historians prove that the Mongols were *not* the inventors of paper-money. On the contrary they found in the country innumerable bank-notes and banks: the Chinese had had their monetary crises, and their bankrupts, and their forgers: in short, every good and evil attendant upon paper-issues. The conquerors increased rather than rectified the embarrassments of the Chinese.

In 1284, *Koublai-khan*, the first of the new dynasty, ordered the mandarin *Lou-chi-joung* to prepare a plan for the establishment of a new paper-circulation. This appeared in (and indeed was confined to) the year 1287; for the new plan was a failure, and the emperor was simply obliged to increase the quantity of those bills called *pao-tchhao**, or "precious paper-money," calling in as many as possible of the old notes of the Souang dynasty. These notes, though similar to former ones, were most elaborately ornamented. In 1351 the entire system had become so rotten that fresh changes were made, but without raising the funds; and when the Mongols were driven from China, they had entirely ruined it by their paper-money.

The Ming (native dynasty), which succeeded that of the Youan or Mongols, caused a total revision of the *tchhao*, and issued six different sorts of notes, respectively for "strings" of 1000, 500, 400, 300, 200, and 100 deniers. But though every expedient was tried to keep up their value, such as forbidding the people to traffic in gold, silver, and precious articles, the value of seventeen "strings" in paper was soon only equal to thirteen in copper. At length, in 1448, only *three* deniers could be obtained for a note for *one thousand!* This seems to have brought about the final crisis. But the government was unwilling to give up the point without the most strenuous efforts; metal coin was forbidden to be passed, and, in 1455, the public taxes were decreed to be paid in *tchhao*, which had now become a "substitute for metal-money." All was, however, of no avail; paper gradually disappeared from the circulation, and nothing more is mentioned about it in the minute Chinese histories after the last-named year.

We prefix to this article an engraving of a bank-note, or *tchhao*, issued by the *Mings*.

The upper division may be called the obverse, and the lower one the reverse, of the note; for, like the leaves which form Chinese books, it is doubled back and pasted together, so as to have the appearance of having been printed on both sides. The writing at the top signifies that it is a (Pao-tchhao) note of the Emperor Zong-King, of the Ming dynasty; that within the border states the amount for which it is to pass, namely, a string of 1000 deniers. The following is a translation of the writing in the lower half or reverse of the note: *At the petition of the treasury board, it is ordained that the paper-money thus marked with the seal of the imperial dynasty of the Mings, shall have currency, and be used in all respects as if it were copper-money. Whoever disobey will have their heads cut off!* It is not recorded whether this terrible penalty was ever enforced; but in spite of it, as we have already seen, these notes became as waste-paper.

At the present time, it would appear that a system of paper-currency, upon a better foundation than any hitherto tried, is slowly gaining ground. This system is still in its infancy, and the bad state of public and private credit in China interposes many obstacles to its ever coming to maturity. In large trading cities there are numerous banks both of deposit and issue. They are not controlled by government, but conducted by private individuals, who issue notes in the nature of checks or *coupons*, like the *pian-thsian* before-mentioned; for the document is cut in half, one portion being presented to the depositor for circulation, and the other retained as a check by the bankers. Bills of exchange have been, in few instances, found convenient by the Chinese; but bad faith has hitherto hindered their extensive employment†.

* The word *tchhao* signifies, "substitute for metal" or money, and is the general name for any sort of paper-money in the Chinese language.

† *China Opened*, by the Rev. Charles Gutzlaff, vol. ii., p. 21.

If ever household affections and loves are graceful things, they are graceful in the poor. The ties that bind the wealthy and the proud to home may be forged on earth, but those which link the poor man to his humble hearth are of the true metal and bear the stamp of heaven. The man of high descent may love the halls and lands of his inheritance as a part of himself, as trophies of his birth and power; the poor man's attachment to the tenement he holds, which strangers have held before, and may to-morrow occupy again, has a worthier root, struck deep into a purer soil. His household gods are of flesh and blood, with no alloy of silver, gold, or precious stones; he has no property but in the affections of his own heart; and when they endear bare floors and walls, despite of rags, and toil, and scanty meals, that man has his love of home from God, and his rude hut becomes a solemn place.—Dickens.

There is one in the world who feels for him who is sad, a keener pang than he feels for himself; there is one to whom reflected joy is better than that which comes direct; there is one who rejoices in another's honour, more than in any which is one's own; there is one on whom another's transcendent excellence sheds no beam but that of delight; there is one who hides another's infirmities, more faithfully than one's own; there is one who loses all sense of *self* in the sentiment of kindness, tenderness, and devotion to another. That one is Woman.—S.

In reference to the periods which mark the various stages of the progress of the cuckoo through the season, I have somewhere met with the following couplets—

In April,
Come he will.
In May,
He sings all day.
In June,
He alters his tune.
In July,
He prepares to fly.
Come August,
Go he must.——Yarrell.

THE RAINBOW.

Soft glowing in uncertain birth,
'Twixt Nature's smiles and tears,
The bow, O Lord! which thou hast bent,
Bright in the cloud appears.
The portal of thy dwelling-place,
That pure arch seems to be,
And, as I bless its mystic light,
My spirit turns to Thee.

Thus gleaming o'er a guilty world,
We hail the ray of love;—
Thus dawns upon the contrite soul
Thy mercy from above;
And as thy faithful promise speaks,
Repentant sin forgiven,
In humble hope we bless the beam
That points the way to heaven.

Lady Flora Hastings.

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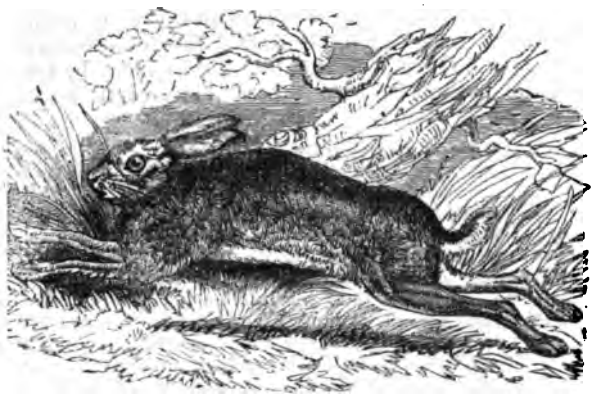
RURAL SPORTS FOR THE MONTHS.

MARCH.

Like some poor exiled wretch
The frighted hare leaves her late dear abodes,
O'er plains remote she stretches far away,
Ah never to return! for greedy Death
Hovering exults, secure to seize his prey.—SOMERVILLE.



THAT branch of hunting in which the dogs employed pursue their game by sight, and not by scent, is denominated "coursing," and is a practice of high antiquity and considerable celebrity. There is reason to believe that a dog, quick of sight, and somewhat swift of foot, was known to the ancients nearly 4000 years ago; and in the time of Arrian, who flourished A.D. 150, the practice of coursing had been reduced to a systematic form. Yet the early representations of dogs employed in coursing the hare, present little conformity with the elegant make, and limbs so especially adapted for fleetness, which distinguish our modern greyhound.

Of the latter animal, however, it has been truly said that, "Admire him as much as we will, when we examine him on anatomical, physiological, and true philosophical principles, we must be constrained to consider him as wholly an artificial animal." The coursing of the ancients was of a bolder and more masculine character than that of our own times, for the stag, wolf, wild goat, fox, and other swift animals, were thus pursued; and besides the employment of fleet dogs of various kinds, the huntsmen were provided with suitable weapons, such as bows, spears, darts, &c. The modern practice of coursing is confined to the pursuit of the hare only, and is followed either in its simple form, or with the additional stimulus of matching the dogs of different individuals against each other, and adjudging prizes to the victors.

Simple, or unmatched coursing, though originally considered a sufficiently interesting employment, and still possessing many advocates, is too monotonous in its character to please the zealous admirer of more enlivening sports. An old writer calls "hunting of the hare with greyhoundes a ryght good solace for men that be studiouse, or theim to whom nature hath not geven personage or courage apte for the warres; and also for gentilwomen which feare nether sonne, nor wynde, for appayyring their beautie; and peradventure, (adds he,) they shall be therat lesse idell than they shold be at home in their chambers." Arrian's panegyric of this sport is as follows:—"Concerning coursing with greyhoundes—the which is doubtlesse a noble pastime, and as meet for nobility and gentlemen, as any of the others before declared, especially the course of the hare, which is a sport continually in sight, and made without any great travaile; so that recreation is therein to be found without immeasurable toyle and payne: whereas, in hunting with hounds, although the pastime be great, yet many times the toyle and payne is also exceeding great; and then it may well be called eyther a painfull pastime, or a pleasant payne."

The practice of coursing has been decried even more perhaps than that of hunting, on account of its inhumanity; the chances of escape for the hare being fewer, and the speed to which she is pushed far greater. But it is by no means considered in this light by sportsmen themselves. They hold it unfair and unsportsmanlike to pursue their game at a great disadvantage, and therefore make it a rule that a brace of greyhounds only shall be used in the pursuit of a single hare, and that when a hare is found on her form, it is disgraceful to put her up without withdrawing the dogs to a fair distance, so that the pursuers and the pursued may be nearly on a par. Three greyhounds to one hare was even in olden time considered against the laws of coursing, seeing that "a brace of dogges is enow for such a poor beaste."

Match coursing is a much more exciting pursuit than the one we have just alluded to, inasmuch as it includes something of the competition and anxiety which attach in a still greater degree to horse-racing. The chase of the hare is in this case entered on principally as a trial of speed in greyhounds matched against each other; and these animals, by the exertion of that fleetness for which they are so remarkable, earn a sporting celebrity for their respective owners, and gain for them the prizes awarded on the occasion. Clubs are established in various places, for the promotion of this sport.

But we must turn our attention from the pursuers to the pursued, and examine the history of the *timid* and inoffensive animal, thus made the object of interest and eager contention. The genus *Lepus*, to which the hare belongs, includes many species of animals, having points of great similarity with each other, and is considered as one of the most natural as well as most numerous and remarkable families in the class of rodent, or gnawing mammalia. Hares, properly so called, or animals of the allied sub-genera agreeing well with them in their main characters, are distributed over most countries on the face of the earth; being found alike in warm regions, on the margins of deserts, in wild and hilly countries, in cultivated lands, and on the verge of perpetual snow. All the species are perfectly defenceless, and find their only chance of safety in the fleetness of their movements; they are all alike under the influence of an almost perpetual fear, and their quick perception of sounds, which would be inaudible to many other animals, renders them watchful and alive to danger. This excessive timidity and apprehension cannot be regarded as otherwise than painful to the animal, and it has been remarked by one of our naturalists that "all but sportsmen must pity creatures which exist constantly under the excitement of acute fear."

The common hare is sufficiently known as to its general figure, which is framed for extraordinary powers of locomotion. The fore-legs are much shorter and more slender than the hind-legs, and by this peculiarity greatly assist the saltatory motion of the animal. It is a singularity of this species to have the palms of the feet covered with hair, which protects them from the injury they would be likely to receive from the rough, dry soil they prefer, and in some measure compensates for the want of that elastic padding, which in the dog and other animals affords so good a security to its possessors. The eyes of the hare are admirably adapted to its habits and necessities. They are very prominent, and the pupil is elongated in a horizontal direction. Thus the field of vision is sufficiently large to allow the animal to keep its pursuers in view, without altering the position of the head. As it is impossible, however, that the hare can look in two directions at the same time, it has been known to run into the very danger it was seeking to avoid. The upper lip of the hare is cleft. The nostrils are circular, and almost hidden in a fold, by which means they are capable of being closed. The tongue is thick and soft. The great length of the ears, and their mobility in every

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direction, are very favourable to the reception of sound, and the anatomy of these organs shows that they are particularly calculated to receive such sounds as come from behind. Like the nostrils, they are capable of being closed, and thus, in a state of safety and repose, the animal has the power of lessening that acute perception of sounds which would be unnecessary, as well as irksome at such a time.

Besides these characters which are common to all the genus, the hare has certain peculiarities as a species, the most prominent of which is colour. This, in the natural state of the animal, is always grayish-brown, with the exception of some of the Alpine species, whose colours change with the seasons. The tail is invariably white on the under side, and blackish on the upper part. There is a spot over or around the eye, in many cases white, and always lighter coloured than the surrounding fur, and this spot is, in a state of nature, never wanting. The under part of the body is white, and the tips of the ears are black; the body, especially the upper part, is covered with two sorts of hair, the one long and silky, the other short, fine, and woolly:—the latter is extensively used in the manufacture of hats as a substitute for the hair of the beaver, to which, however, it is greatly inferior in durability and in retention of the colour given by dyeing. In those countries of Middle and Southern Europe, which, compared with our own country, are but thinly peopled, and indifferently cultivated, the number of hares taken annually is immense, so that their skins form an important article of commerce, being exported for the use of the hat manufacturer, as well as employed locally as warm articles of clothing. It is understood that the small kingdom of Bohemia alone furnishes nearly half a million skins in the course of the year, Austria Proper nearly double that number, and Russia and Western Siberia a still larger proportion.

Hares multiply rapidly, and if undisturbed, it is supposed their increase would prove greater than that of most other quadrupeds. A tuft of grass, or heather, or a mere hollow formed on the bare ground, is often the birth-place and dwelling of the young leverets, until they are old enough to provide for the supply of their own wants. The young are suckled by the dam for little more than three weeks, and then begin to separate and make their own forms. They arrive at maturity in one year, and the term of their natural lives is supposed to be eight or nine years.

Hares do not burrow like rabbits beneath the earth; they merely look for a convenient hollow place in a furrow, where, by their similarity in colour with the soil around them, they escape the notice of all but experienced eyes. This is called their seat, and here they pass the greater part of the day, till the approach of evening gives them courage to go abroad in search of sustenance. They have been observed by shepherds and those who are in the habit of watching their proceedings, to change their seat, according to the weather, generally seeking the more elevated ground when rain prevails. In severe weather they repair to the woods, where they will prey on the bark of almost every tree, and are often very injurious to young plantations. Their food consists of vegetables, and they show the greatest relish for milky and succulent plants.

The hare is commonly considered to possess no great degree of intelligence, yet the way in which it doubles to avoid its pursuers seems to evince much sagacity. Fearful as these animals are in their natural state, they have yet been soothed by gentle treatment into a degree of confidence and boldness quite unexpected in creatures of such acknowledged timidity. A French naturalist describes one of these animals as having become entirely domesticated in his house, and having lost its natural wildness, with respect to all the inmates; but showing tokens of fear on the approach of strangers. In winter, it sat before the fire between two large Angora cats, and a sporting dog, with whom it lived on the best of terms; at table it was generally close to its master looking for food, and if thwarted in its expectation would beat with its fore-paws on the hand and arm of the person so treating it.

The age of the hare is, as we have said, reckoned to extend to eight or nine years; but one of Cowper's favourites lived eleven years and eleven months. Of this animal he speaks in the following lines.

. . . . . One sheltered hare
Has never heard the sanguinary yell
Of cruel man exulting in her woes.
Innocent partner of my peaceful home,
Whom ten long years experience of my care
Has made at last familiar; she has lost
Much of her vigilant, instinctive dread,
Nor needful here beneath a roof like mine.
Yes, thou may'st eat thy bread, and lick the hand
That feeds thee; thou may'st frolic on the floor
At evening, and at night retire secure
To thy straw couch, and slumber unalarmed;
For I have gained thy confidence, have pledged
All that is human in me to protect
Thy unsuspecting gratitude and love.
If I survive thee, I will dig thy grave;
And, when I place thee in it, sighing say,
I knew at least one hare that had a friend.

HARE IN HER FORM.

GARDEN HERBS.

RUE.

Here did she drop a tear; here, in this place,
I'll set a bank of rue, sour herb of grace;
Rue even for ruth, here shortly shall be seen,
In the remembrance of a weeping queen.—SHAKSPEARE.

THE name *herb of grace*, given to this plant in the above lines, was in common use in Gerard's time, and is supposed to have arisen from the custom of the Romish clergy of sprinkling holy water from bundles of bitter herbs.

Rue belongs to an extensive natural order of plants called *Rutaceæ*, inhabiting widely different situations from each other, and forming, as they are thus united, an interesting, but somewhat heterogeneous group. This order contains thirty-seven genera, or families, most of which are strong-scented plants. Some of them are shrubby in their habit, some arborescent: many of them possess medicinal qualities, as the *Guaiacums*, (one species of which yields also the *lignum vitæ* of commerce): others are favourite plants in greenhouses, as the *Diosmas*, and are very easy of cultivation. Common garden rue is the type of the order. It is a native of the South of Europe, and is said to have been first cultivated in this country in 1562, but writers of that period, and of a still earlier date, make mention of it as of a common and well-known plant. Thus we find Tusser, who wrote before that time, saying,—

. . . . . What savour is better,
For places infected, than wormwood and rue?

The plant is accurately described in the quaint language of Gerard.

Garden rue, or planted rue, is a shrub full of branches, now and then a yard high, or higher; the stalkes whereof

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be green: the leaves hereof consist of divers parts, and are covered with a whitish barke, the branches are more divided into wings, about which are certaine little ones, of an odd number, something broad, more long than round, smooth, and somewhat fat, of a gray colour, or greenish blew: the floures in the tops of the branches are of a pale yellow, consisting of four little leaves, something hollow, in the middle of which standeth up a little head or button, four-square, seldom five-square, containing as many coffers as it hath corners, being compassed about with divers little yellow threds, out of which hang pretie fine tips, of one colour. The seed groweth in the little coffers: the root is woody, and fastened with many strings. This rue hath a very strong and rank smell, and a biting taste: it joyeth in sunnie and open places: it prospereth in rough and brickie ground.

Among the ancient Greeks and Romans this herb was held in great esteem. The Greeks used it, together with parsley, for the bordering of their gardens, and as the gardens could not be entered without passing this border, it became a proverb among them, when any persons were about to enter on an undertaking, but had not yet taken any steps towards it, "You are not yet arrived at the parsley and rue." The uses to which the ancients applied this plant were many of them very superstitious, and it was generally believed that the efficacy of the plant was enhanced by stealing it from a neighbour's garden. In Aristotle's time rue was worn about the neck as a charm against witchcraft.

That rue was planted to a considerable extent among the Romans appears from the directions of Pliny to rue gatherers,—that they keep their hands well gloved, to avoid the blisters which the pungency of this herb is apt to produce. The same author notices the poisonous nature of the juice of rue, when taken in too great quantity, especially that drawn from the rue which grew in Macedonia, about the river *Aliacmon*, and in Galatia, and states that juice of hemlock destroys this poisonous quality. The juice of rue was kept in boxes made of brass or copper, and was used against the sting of serpents, scorpions, bees, hornets, &c., and for the bite of mad dogs. It was employed to foment the limbs of persons benumbed with cold: it was drunk with wine to cure the head-ache: it was taken likewise to prevent the consequences of excess in drinking. The leaves were eaten by engravers, carvers, and painters, as a preservative to the eye-sight: others just touched the corners of their eyes with the juice, to cure weakness of vision. A drink was made from it for the cure of all complaints incident to four-footed animals: its reputed virtues are, in fact, too numerous and too contradictory to be recounted here.

Besides the medicinal uses for which this herb was valued among the Romans, it was also esteemed on account of the flavour it imparted to their wines. Columella, in speaking of it, says,—

> And *rue*, which the Palladian berries' taste excels;

and Pliny informs us that when Cornelius Cethegus was chosen consul with Quintius Flaminius, he gave to the people, after the election, a largess of new wine, aromatized with rue. This would probably be very repugnant to modern taste, for this herb is intolerably bitter.

The leaves of rue are said to have formed a principal ingredient in the famous antidote to poison, used by Mithridates, king of Pontus. This antidote, with slight alterations, has been in use for nearly nineteen centuries, and is still employed on the Continent. It has been exploded in Britain, and laughed at as an absurd farrago, ever since Dr. Heberden published his *Antitheriaca*.

Pliny tells us that the weasel is so well acquainted with the virtues and powers of rue, that before he attacks the serpent he eats the herb to prevent the poison from taking effect. Macer, who wrote his Latin poem about twenty years before the Christian era, notices the same thing, and an old naturalist has given the following translation of the lines:—

> And weezels teach, it can withstand strong poyson's spite,
> Which, when they are about with serpents black to fight,
> In wondrous sort do first of all rue nibble, eat, and bite.

If we look into the writings of the old medical practitioners and herbalists of our own country, we shall find the qualities of this plant described in much the same exaggerated strain that we have noticed in the ancient authors of Greece and Rome. One tells us that the very smell of rue has been known to preserve from infection during pestilence, and therefore we are to wear a nosegay of it whenever we visit a person ill of any contagious disease; and that if we would be still farther secured from danger, we must chew some of the leaves, or eat of a conserve of rue. Another affirms that by eating the leaves of rue, persons may cure themselves of the king's evil. A third tells us that the juice of rue, made hot in the rind of a pomegranate, and dropped into the ears, is a cure for the ear-ache, and is also a remedy for shingles, St. Anthony's fire, and other disorders; that the herb itself, a little boiled or scalded, kept in pickle, and eaten, is good for dimness of the eyes, and, boiled in vinegar, relieves shortness of breath and pain in the chest, side, or joints. A fourth ascribes to it the virtue of curing gout and dropsy, and of removing ringworm, warts, and all diseases of the skin. A fifth pronounces it to be excellent in all illnesses of the stomach which proceed from a cold cause, and only dangerous in the too frequent use of it; and a sixth is so full of its praises, that at the close of his remarks he declares that the greatest commendation he can bestow upon it falls short of its merits.

But we would not have our readers misled by these extravagant eulogiums, or induced, by this slight mention of them, to employ the herb in the way, or for the purposes above named. Let them rather attend to the opinions of modern and better-skilled persons, who assure us that its usefulness is uncertain and unimportant, and who at the same time acquaint us that large and repeated doses produce parching thirst, burning pain of the stomach and bowels, head-ache, delirium, and death.

Wild rue is much more energetic in its action than the cultivated sort, and therefore more caution is required in using it. Gerard declares it to be virulent and pernicious, and says that it sometimes "fumeth out a vapour or air, so hurtful that it scorcheth the face of him that looketh upon it, raising up blisters, wheales, and other accidents: it venometh their hands that touch it, and will infect the face also, if it be touched with them before they be clean washed, wherefore it is not to be admitted into meat or medicine."

Rue is a hardy shrub, and is easily cultivated by planting the seeds, or slips, or cuttings, early in the spring months. It blossoms in July and August, or, if it be in a warm country, or in a sheltered situation, still earlier. According to Pliny, there is such friendship between it and the fig-tree that it prospers nowhere so well as under a fig-tree. Plutarch notes the same circumstance in his first booke of the Symposiaeks or *Feasts*, and says it becomes more sweet and mild in such situations, because it takes away some of the sweetness of the fig-tree, and parts with some of its own bitter flavour.

CHRISTIANITY is not a latitudinarian religion, proposing a variety of independent doctrines, and leaving to the choice of its professors, which they will embrace, and which they will reject: but it is a religion precise and definite; it proposes a system of truths, mutually connected with and dependent on each other; it represents those truths as the fit objects of a Christian's faith; and to a sincere and conscientious belief and profession of them it promises happiness; on a wilful disbelief and rejection of them it denounces woe. —BISHOP MANT.

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FRESH-WATER FISH.

Introduction.

Each rising charm the bounteous stream bestows,
The grass that thickens, and the flower that blows.
And while the vale the humid wealth imbibes,
The fostering wave sustains the finny tribes:
The carp, with golden scales, in wanton play,
The trout in crimson-speckled glory gay;
The red-finned roach, the silver-coated eel;
The pike, whose haunt the twisted roots conceal;
The healing tench, the gudgeon, perch, and bream;
And all the sportive natives of the stream.

When we consider that water occupies more than two-thirds of the globe, we shall have no difficulty in admitting the statement made by naturalists, that fishes constitute by far the most numerous class of vertebrated animals, both as respects the number of individuals and the variety of their forms. Indeed, the constant accessions which are being made to our knowledge of fishes, and other considerations, lead us to suppose that not more than half the existing species are known and described. The natural history of fishes is more imperfect than that of quadrupeds, birds, and insects, because their native abode is of vast dimensions, and can to a very limited extent only be explored by man, from whose curious eye fishes can easily withdraw themselves into haunts inaccessible to the inhabitants of the land; thus the study of Ichthyology, interesting and beautiful as it is, presents more difficulties than any other department of natural history.

Fishes were arranged by Linnæus in six principal orders, and subdivided into several tribes. Four of these were marked by the position of their ventral or belly fins, and two by their gills. But the most approved arrangement is that of Cuvier, who places fishes in the fourth class of organic beings, the first three comprising beasts, birds, and reptiles. The class of fishes he divides into two sub-classes, viz., 1st, cartilaginous, and 2nd, osseous fishes. In the former the bones are gristly, and in the latter firm, although far less compact than in the higher orders of animals.

The general form of fishes is cylindrical, pointed more or less at each end, and slightly compressed at the sides; but this form is subject to many extraordinary variations, adapted to the economy of the animal: some fish are short and round—others are elongated;—some are compressed—others depressed: the most common form, however, is that first given, a familiar example of which is presented by the mackerel, which exhibits, as Mr. Yarrell remarks, "the highest degree of elegance in shape, and when recently taken from the water, is so rich and so varied in its colour, as to be fairly entitled to be considered one of the most beautiful among British fishes."

It is almost superfluous to remark that the forms of fishes are admirably adapted to their general habits and economy, because we know how much gracious provision is made by the Almighty for all His creatures. This fact is so constantly witnessed by the naturalist, and he sees it illustrated in so many thousand ways, almost at every advancing step which his improving knowledge leads him, that while it constitutes a principal charm in the study of natural history, it often brings up to his mind the gentle monition of the Saviour, that God, who forgetteth not the sparrows, who feedeth the ravens and clotheth the grass of the field, will not discontinue His watchful care over those whom He has declared to be far better than they.

The external form of fishes tends to celerity and ease of motion: man has imitated this modelling in the build of those ships in which the quickest despatch is needful; but human competition against the perfection of nature's works always fails, for all the larger fishes can not only overtake the fastest-sailing vessel, but play around it, apparently without any unusual effort.

Most fishes, in addition to the great fin on the tail, are furnished with two pairs of fins upon the sides, two single fins upon the back, and one upon the belly, or between the belly and the tail. These fins are highly important as organs of motion, and they enable the naturalist, by their structure, position, and number, to distinguish orders, families, and genera. But the chief instrument of velocity is the tail, aided by the strength and pliancy of the back-bone: by the impulse of this organ alone the animal darts through the water with the swiftness of an arrow, the wedge-shaped head enabling it to divide the water with ease. But whether in pursuit of prey or avoiding an enemy, the smaller fins are all laid close to its body: these fins are too minute and flexible, compared with the animal's weight, to impel it so quickly; their peculiar office is to adjust and modify the motion imparted by the energy of the tail. The ventral and dorsal fins keep the fish in its proper position, and by means of the former fin the fish is probably assisted in raising or depressing its body in the water. The pectoral fins assist and regulate progressive motion: by extending them, the progress is stopped when swimming rapidly; and by folding either, while the other continues to play, the turn to the left or right is accomplished. The balancing use of the fins has been shown by experiments on several large-headed fish.

Fishes are furnished with certain protecting organs, which have been divided into the three distinct processes of skin, scales, and spines. The skin consists of the dermis, or true skin, a mucous tissue, and an epidermis, or cuticle. The mucous tissue, which in all animals is the seat of colour, is remarkable in fishes for its brilliant tints and iridescent reflections. The cuticle is generally covered with a mucous secretion, which also extends to the scales. The scales when viewed by the microscope present a wonderful and beautiful construction: they serve many important purposes in the general economy of fishes. The sharp spinous appendages, which are placed in different parts of the body in different fishes, seem intended as weapons either of defence or of offence.

The inhabitants of the waters as well as those of the land depend upon the oxygen of the atmosphere for respiration: the quantity of air necessary to sustain the life of a fish is smaller than that required by warm-blooded animals; but a greater or less supply of air is essential to every living being. The death of fish in a severe frost is in consequence of the congelation of the surface of the water, whereby the external air is excluded: the poor animals below the sheet of ice must perish unless an opening be made to admit the air: we see the fishes themselves bear witness to the fact that they cannot live without air, in the eagerness with which the suffocating creatures crowd round any opening made in the ice. The inconvenience they suffer is so great as to deprive them on these occasions of their natural timidity, for they can be caught by the hand without difficulty. The peculiar motion of the fish's mouth and gill-lids as if in the constant act of drinking, (whence the vulgar saying, "as thirsty as a fish,") is nothing more than the act of respiration. The gills, which act the part of lungs, are placed externally: they may be described as consisting, in the bony fishes, of four arched bones placed in succession close behind the mouth on each side, and covered by an operculum or gill-lid. On these arched bones are spread out several fine laminæ, or thin membranous folds, in which the artery bringing the blood from the heart, spreads itself out into very numerous and minute ramifications. The operculum is moveable by means of muscles attached to it. The fish in respiring takes a mouthful of water, and passing it to the back of its mouth allows it to remain there a moment in contact with the gills, through which at the same time the blood is passing freely. Water, exposed to the air, always contains a portion of that fluid, and the air thus dissolved by the water acts upon the fish's blood; the fish then lifts its

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operculum and causes the water to be discharged backwards. The blood being thus aërated is again collected from very fine branches into trunks, which, running from each of the branchial ribs, finally unite and form the aorta for conveying the blood to the whole body. From this, the blood is returned by the veins to a simple auricle, thence it passes into a single ventricle, which, in turn, drives it into the branchial artery, and so back to the gills again. "From what we have said of the mode of respiration, it is clear that a trout, before it attempts to breathe, must turn its head up against the stream. Were it to attempt this operation facing down the stream it would in vain try to let out the water from its gills, for as soon as it had lifted its operculum, the current would pour in water from behind, in place of suffering it to discharge what was there. It therefore becomes part of the angler's art, to keep the head of the trout he has hooked down the stream, in which situation it cannot attempt to breathe, and is therefore the sooner exhausted." (LORD'S *Popular Physiology*.)

Many fishes are furnished with a bladder filled with air, and placed in the upper part of the abdomen close against the spine; this has been thought to assist the function of respiration. It is however more probable that the air-bladder is destined to assist the animal's movements; for we find it largest in such fishes as move with great velocity. This organ is wanting in flat-fish, where, however, the large lateral fins supply its place; also in the lamprey, which, in consequence, moves but slowly along the bottom of the water. There seems however but little doubt that this organ enables fishes to maintain and adapt their specific gravity to the various depths of the element in which they move.

In whatever way then we regard fishes, we see that by their internal structure and outward shape they seem equally well furnished with the means of enjoying life as birds or quadrupeds. When the senses of fishes, and other faculties pertaining to their organization are examined, we find that nature having intended them for less perfect beings has been proportionably sparing in her endowments. The brain is very small. The organs of smell and the nerves supplying them, are perceptible in most fishes; but as air is the only medium for the diffusion of odours, we can scarcely suppose that residing in the water they are affected by them; but it has been supposed that the olfactory membrane serves them instead of a distinguishing palate, in the same way as we distinguish by our taste.

The taste of fishes must be imperfect, if its delicacy arises from the softness of the organ; since the whole mouth of most fishes is covered with a hard bony substance, by which they cannot discriminate bodies by the palate. Salt-water fishes have been known to swallow the fisherman's plummet instead of the bait: indeed, the greediness of the inhabitants of salt-water is prodigious: the lines of the fishermen are coarse and clumsy; the baits are seldom more than a piece of fish or the flesh of some quadruped, stuck on the hook in a rude manner. On the banks of Newfoundland, the hook, which is only hidden by the entrails of the animal last taken, is dropped into the water, the cod seizes it at once, and the fishermen have but to pull up as fast as they can throw in: but it is otherwise in fresh water, for, as Mr. Daniel observes, "The lines must be drawn to a hair-like fineness, be tinctured of the peculiar colour of the stream, the bait must be selected with care, or formed with the nicest art, and still the fishes approach with diffidence, and often swim round it with disdain, while hours are wasted in fruitless expectation, and the patience of an angler passes into a proverb."

The eyes of fishes are peculiarly adapted to vision in so dense and highly refractive a medium as water. The outer surface of this organ is flat, and the internal one spherical: the flat cornea sustains less injury than a projecting one, especially in the absence of eyelids and other projecting coverlids: this flatness, however, is compensated by the greater magnifying power of the crystalline lens. But the particular form and situation of the eyes of fishes vary in different species according to their position in the waters, their general habits, and the mode in which they pursue their prey. When we look upon the surface of the waters, and our eye seeks in vain to penetrate the depth, we must not suppose that their inhabitants are similarly circumstanced with respect to us. When we are on the outside of a room, we know how difficult it is to distinguish objects within, especially when the solar light falls obliquely upon the glass: but those within the room have no such difficulty: they can see clearly all that passes without; and this we may fairly presume to be the case with fishes—they can see clearly objects out of the water, while we cannot often see them in the water. Much light is absorbed below certain depths from the surface, and we find that those fishes which dive deep have very large organs of sight.

It is a very common error to suppose that fishes are destitute of hearing: those which have the gills free have no external openings for the ears, but two such openings are discovered in fishes which have fixed gills. In both cases, however, internal provision is made for this very important function: indeed, the custom is as old as the ancient Romans to keep pet fish in ponds, and train them to swim to a certain spot, at the sound of a bell, to be fed. Mr. Swainson tells us, as "a well-authenticated fact, that the Chinese, who breed great numbers of gold-fish, call them together, at the time of feeding, by a whistle; and the same mode of summoning other species by a noise, in aquatic preserves, is upon record."

The teeth of fishes are so constant and permanent in their characters as to be second only to the fins in determining character. The food of most fishes is of an animal nature, and they seem as if impelled by urgent and constant necessity to pursue their prey. This appetite surpasses both in strength and activity those bounds which in other orders of the animal kingdom Nature seems to have prescribed. Every aquatic animal falls a victim to the indiscriminate voracity of fishes. Insects, worms, or the spawn of other tenants of the waters, sustain the smaller tribes, which, in their turn, are pursued by larger and more rapacious enemies.

From their extraordinary voracity, (says Yarrell,) their rapid digestion, and the war of extermination they carry on among themselves, the greater and more powerful fishes consuming the smaller and weaker, from the largest to the most diminutive: add to this, the constant and extensive destruction effected by the numerous sweeping nets of ruthless man, and it is probable that comparatively but few fishes die a natural death.

The same talented naturalist remarks that "the wounds of fish heal rapidly; and they appear to have but few diseases, probably owing to the uniformity of the temperature in the medium in which they reside."

We have thus far given a brief and general view of the structure and habits of fishes. We are about to invite the reader's attention to the principal individuals which inhabit fresh water; and, in a course of illustrated articles, we propose to state the natural history of each fish, so far as it is well authenticated by the united observations of credible naturalists: at the same time, we shall avail ourselves of such curious antiquarian and anecdotal information which will tend to illustrate the state of knowledge as it existed in former days.

HE who looks not beyond this world, cannot feel pleasure in anything which tends to disturb his comforts, or thwart his will.—H. W. B. DAUBENEY.

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THE

Saturday Magazine.

No. 561. SUPPLEMENT, MARCH, 1841. { PRICE ONE PENNY.

OVERLAND JOURNEY FROM INDIA TO ENGLAND.

TOKAT, IN ASIA MINOR.

SECOND ROUTE.

BY WAY OF THE PERSIAN GULF, PERSIA, ARMENIA, ASIA MINOR, AND CONSTANTINOPLE, TO EUROPE.

IN inviting our readers to accompany us in a second overland journey from India to England, we deem it necessary to recall attention to the different routes usually taken, in order to explain the arrangement which we shall adopt. Some travellers embark at Calcutta, Madras, or Bombay; sail across the Indian Ocean to the Red Sea; ascend that sea to a port on the western shore; travel across a sandy desert to the Nile; and follow this river to its exit in the Mediterranean. Another route is, to ascend the Persian Gulf instead of the Red Sea, and to travel overland to the northern part of Persia; from whence three distinct routes conduct the traveller to Europe: 1st. northward through Russia;—2nd. along the south shore of the Black Sea to Constantinople;—3rd. along the north shore of the same sea to Russia, Austria, &c. Lastly, the route which is most correctly termed "overland," is that wherein the traveller sets out from the north-west frontier of India; traverses the dominions of the Sikhs, the Afghans, the Bokharians, the Uzbeks, and other semi-civilized tribes; and finally arrives at the shores of the Caspian, from whence he takes one of the homeward routes already mentioned. With regard to the route by way of the Red Sea and Egypt, we do not deem it necessary to devote a Supplement thereto, since the only "overland" passage is from Cosseir, on the shores of the Red Sea, to Dendera, on the banks of the Nile, a distance of less than 100 miles. The other routes may be so arranged as to give a tolerably complete notion of the subject in three Supplements. We have already traced the course from Bombay to Bassora by sea, touching at Muscat; then through Persia, by way of Bagdad, Kermanshah, Teheran, and Tabriz; and thence over Mount Caucasus to Europe, Captain Keppel being our chief travelling companion. On the present occasion we propose to land at Bushire instead of Bassora; to proceed by way of Shiraz and Ispahan to Northern Persia; and thence westward through Asia Minor to Constantinople; availing ourselves chiefly of the descriptions by Sir James Alexander and Mr. Baillie Fraser. Another Supplement, treating of the route by way of the Afghan country, will complete the subject.

Ships proceeding from Bombay to the Persian Gulf put in very frequently at Bushire, and the passengers proceed thence by land through Persia. This sea-port is situated on a sandy beach, in a dead, flat country; eastward are a few date trees, and at the distance of forty miles rises a lofty range of dark blue mountains. The town has been said to present the appearance of a half-built city, from the incomplete state in which many of the houses are left. A curious practice prevails in the construction of the houses, for alleviating the excessive heat of the air in summer: on the flat roofs of the houses are square *wind* towers, sometimes rising to the height of sixty or a hundred feet, and pierced on each side with three or four longitudinal openings, through

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which every breath of wind is conveyed to the sitting apartments beneath. Those who are accustomed to the domestic comforts of an English city will be surprised to hear that no water fit for drinking can be procured within three miles of Bushire, and that Arab women fetch the whole of the water required by the inhabitants, carrying it on their backs in sheep-skin bags or pouches.

The mode of travelling throughout Persia is almost exclusively by horse or mule, for the want of roads, and the attacks of predatory tribes, render vehicles ill-fitted for such a country. Accordingly, travellers, on leaving Bushire, bargain with the horse and mule dealers for the hire of these animals at so much per diem. Sir James Alexander's party, when he made the overland journey in 1825, consisted of about twenty persons, including servants. The gentlemen purchased horses for themselves, and hired mules for their servants and baggage; and the mode of travelling which they arranged was as follows:—To leave the halting places every evening an hour and a half before sunset, strike the tent, and pack up all the utensils; march on with one servant and a horse-keeper; completing a march, generally of sixteen or eighteen miles, by ten o'clock; sleep on the ground till sunrise, by which time the baggage mules would have arrived, the tent pitched, and arrangements made for visiting the surrounding country during the day. By this arrangement, the time of travelling was confined to the cool hours of evening.

On leaving Bushire for Shiraz and Persepolis, the traveller passes through a country presenting few points of attraction. The sandy soil is in many parts covered with salt marshes; here and there are to be seen fields of bearded wheat, and wells for the refreshment of the traveller; but the districts between the villages are generally rather sterile. At one spot several naphtha and sulphureous streams issue from the hills, round the bases of which the road winds, and cross the path: this impregnated water is lukewarm at the fountain-head, and leaves a sediment of whitish-gray earth, which is of an acid and saltish taste, and is used by the Persians for acidulating sherbet.

Along this road are several small towns and villages, most of which are provided with caravanserais. Most of our readers are probably aware that these are houses of accommodation for man and horse, in Oriental countries. In general, they have the form of a hollow square, the interior faces of which consist of rooms for travellers; and in the corners are passages leading to ranges of stabling behind the apartments of the travellers. The entrance gateway is always in the side facing the road; and in some cases there is an underground apartment in the centre of the square court, to which travellers may retire when the weather is oppressively hot. It is a common practice to sleep on the roof of the caravanserai, with no other covering than a light curtain to keep away the mosquitoes,—the usual attendants of an Oriental traveller.

The sterile and sandy district of which we have lately spoken, is succeeded by a mountainous country, in which are the ruins of a once celebrated city named Shahpoor. These ruins are distant about 100 miles from Bushire, and at one part is a cave noted for its sculptured rocks. The sculptures are supposed to commemorate the triumph of the Persian king Shahpoor over the Roman emperor Valerian. The king is on horseback, with a crown surmounted by a globe on his head; a Roman, extended on his back, is under the horse's feet; and the emperor, kneeling on one knee in an attitude of submission, with a helmet on his head, and dressed in the Roman costume, is immediately in front. Many Persian cavalry and infantry are introduced in close order, above and to the right and left of these principal figures; and Victory is displaying the scroll of Fame over the king. The rock on whose face this device is sculptured, is of coarse jaspar, but bears a high polish. Numerous other remains of antiquity are found near the same spot, but all are now most desolate and dreary, giving the same indications, as so many other parts of Persia afford, of the fallen state of that once great empire.

At intervals, along the route which we are here following, and which proceeds north-east from Bushire, are several villages, of which about a dozen intervene between that town and Shiraz, a distance of 150 miles. These villages bear a considerable resemblance to each other, and are mostly of a poor and humble character. We shall, therefore, pass them over, and proceed to Shiraz, one of the most important places in the southern part of Persia.

Shiraz, or *Shirauz*, though neither very ancient nor very extensive, has long been one of the boasts of Persia, from the beauty of its environs and the polished gaiety of its inhabitants. It has been the favourite seat of the Persian muses, and near it are buried *Hafiz* and *Saadi*, the chief of the national poets. Its wines are celebrated as the most valuable in the East; and it is the seat of a considerable and increasing trade; but since it ceased to be the residence of *Kurreem Khan*, the inhabitants have lost their character for taste and refinement.

Shiraz lies in a valley, and is surrounded by a brick wall having large bastions at the gateways, of which there are six. Few Oriental cities possess such a fine street as the bazaar Vakeel of Shiraz. This is a very long vaulted avenue, about sixteen feet wide, with good shops on both sides, holes in the centre of the arch for the emission of smoke, and windows in the sides for the admission of light. In the centre is a sort of rotunda, with bazaars branching off to the right and left. Among the public buildings of the city is the tomb of the poet Hafiz, which is a single block of Tabriz marble, inscribed with verses from the works of the poet and from the Koran; the tomb is in a garden, and is surrounded by beautiful cypress trees, but is now environed by common graves, and is no longer adorned as formerly with a copy of Hafiz's poems.

One of the governors of Shiraz, some years ago, erected two buildings to the memory of pious and distinguished men, called the Huft Tun, and the Chehel Tun. These are a kind of pleasure-houses belonging to the governor, and are decorated with paintings of very mediocre character, intended as memorials of distinguished deceased men. The other points of interest in Shiraz are similar to those which are found in most Eastern cities, such as the palaces, gardens, baths; and there is also a similar want of cleanliness and comfort in the streets, for the traveller frequently finds the accumulation of dry mud and dust so great, that the level of the court-yards of the houses is several feet below that of the streets.

Quitting Shiraz (which has more than once suffered from earthquakes) we bend our way towards the far-famed ruins of Persepolis, distant about thirty miles. In the course of this journey we cross the Bend, or Bund Emir, thus alluded to in *Lalla Rookh*.

> There's a bower of roses by Bendemeer's stream,
> And the nightingale sings round it all the day long;
> In the time of my childhood 'twas like a sweet dream
> To sit in the roses, and hear the bird's song.
> That bower and its music I never forget,
> But oft when alone in the bloom of the year,
> I think, is the nightingale singing there yet?
> Are the roses still bright by the calm Bendemeer?

Persepolis was a city of considerable importance in ancient times; and although the date of its erection is now unknown, there seems evidence that it was taken and reduced to ruins by Alexander the Great. These ruins consist chiefly of pillars and doorways, as if forming parts of some noble buildings. They are surrounded by a plain, when viewed from which they present a very noble appearance, being situated on a platform fifty feet in height. The length of this platform is about 1500 feet, and it is approached from the north by a double flight of easy steps of blue marble veined with quartz. At the top of the steps are four walls, surmounted by colossal figures of winged bulls, with remnants of four pillars between the walls, the whole seeming to have formed a gateway. Near this is a stone cistern for water; and further southward is another double flight of steps, on the front of which are sculptured an immense number of figures in procession. On ascending these steps, we come to an assemblage of pillars, the vestiges of which number about forty. The pillars which still remain are very elegant and lofty, with fluted shafts, and are formed of a beautiful gray marble. Tradition states these pillars to have once sustained a roof, and to have formed part of a temple. Southward of these pillars are seen the remains of apartments consisting of square enclosures with sculptured doors, and formed of black marble. Through different parts of the platform run narrow subterranean passages, originally perhaps aqueducts; and near the platform is an immense stone enclosure, which seems to have been the principal residence. The whole platform must have been a work of immense labour, for it is built up of large blocks of coarse black marble, extremely well cut and fitted to each other. The steps leading to the platform are more than 100 in number, and are so shallow in proportion to their width, that a man can make the ascent on horseback. The sculptures and inscriptions on various parts of these ruins have engaged the attention of many travellers, but we have not space to enter further into the subject here.

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From Persepolis to Ispahan, the former capital of Persia, is a distance of about two hundred miles; but presenting so few points of attraction, that most travellers hasten over the journey as quickly as possible. Sir James Alexander pursued this route in the month of July, when the temperature of the air was so excessively high as to throw many of the party into a fever; and he gives the following description of the mode in which the invalids were conveyed:—"In the evening I was so ill with a slow fever, that I could not sit on horseback, and was obliged to proceed in a *cajava*. These are panniers made of wood, with plank bottoms, and covered with cloth: a mule carries two of them. They are four feet in length; therefore the person carried is forced to remain in an upright sitting posture during the whole journey, with the constant risk of getting his head broken against the sides of the conveyance, than which a more disagreeable one I never travelled in. The *tukt-i-rowan* is comparatively a pleasant vehicle; it consists of a frame similar to that of the *cajava*, with a round top, and *is* covered with cloth; it is carried by two mules on a couple of poles. Spare mules accompany it to change as occasion requires; on one of these the driver rides; and a man walks by the side of the vehicle to steady it where the road is rough."

It was while passing through this district that Lieut. Lumsden, a few years before, met a procession which illustrates one of the usages pertaining to the Mohammedan faith. He espied an extensive company or caravan, at the rear of which were several mules laden with coffins, the odour from which indicated the presence of dead bodies. This was a party of pilgrims proceeding from Central Persia to Mecca and Medina. When a wealthy Persian Mohammedan dies, his relations frequently inter him in some neighbouring burying-place, until the usual time for the departure of a pilgrim caravan; at which time the body is removed from the grave and transported to a reputed holy place near Mecca, where it is finally deposited.

The city of Ispahan, the former capital of Persia, has been very fully described in No. 149 of our Magazine. We shall therefore dispense with any account of it here; and shall merely give an outline of the mode in which a Persian noble entertained a party of English officers, since this will illustrate the nature of the diet to which wealthy Persians are accustomed. At six in the evening the party went to the Persian's house, and spent about an hour in smoking, and eating fruit,—the usual preparative for a more substantial meal. The party then seated themselves cross-legged on the ground, by the side of a long coloured table-cloth, washed their hands in water served to them by attendants, and began their meal. This consisted of pillau, rice, kababs, (slices of roasted meat kept warm between two cakes,) fowls over-roasted, in order that they might more easily be pulled to pieces, and other solids; while between every two guests were placed vessels containing iced sherbet, rose-water, milk, and other liquids, laded up by means of large pear-tree spoons. Each guest had two cakes of bread placed before him, one large and soft, to serve as a plate, and the other hard-baked, to eat. When the repast was over, hot water was introduced for washing hands,—a process peculiarly acceptable to Englishmen, accustomed to the use of knives and forks:—smoking was again introduced, and lasted till half-past eight, when the visitors took their leave.

Nothing can seem more strange to a reader accustomed to the regular and systematic mode of government adopted in our own country, than the utter lawlessness which prevails so extensively in Persia. Sir James Alexander, in the expedition to which we have frequently alluded, accompanied Colonel Macdonald, who was sent as envoy from the Governor-General of India to the court of Teheran. The embassy consisted of a considerable number of persons, among whom were the envoy's lady and her servants. During the progress northward from Ispahan, repeated instances occurred of the unsettled state of the country. Some of the khans or lords of the districts through which they passed, visited the travellers on their route, and conversed with them. One of them, Asud Oohlah Khan, in answer to some questions from Colonel Macdonald respecting the revenue and resources of the country, unblushingly answered;—"Of what use is it to tell lies to Europeans? myself and a neighbouring khan contrive every year to cheat his majesty out of a great portion of the revenue, *ullumdullilah* (thanks to Heaven!)" But recollecting himself, he begged the colonel not to say anything about it at court.

On another occasion the townspeople of Kurdahoor attacked the servants who had charge of the treasury of the envoy, and a severe encounter ensued, which did not terminate till the townspeople had had one man killed and many wounded, and the embassy twelve men wounded and several horses killed. An incident occurred on this occasion which was a subject of some merriment to the party. Mrs. Macdonald's maid, and a Hindoo tailor, occupied two *cajavas* or panniers on the back of a mule, and were somewhat separated from the rest of the party. Three of the townspeople came up to them, thrust their hands into the cajava which contained the young woman, and attempted to pull her out. The valiant tailor slunk back into a corner of his pannier, and though called upon by his companion to fire a pistol which he had for their mutual defence, he endeavoured to conceal himself. The distressed damsel thereupon defended herself with a tin kettle, until the appearance of some of the muleteers caused the insurgents to decamp. The tailor, upon being afterwards reproached with his cowardice, stoutly asserted that he courageously jumped from his cajava, and cocked his pistol, upon seeing which the insurgents instantly fled. After he had finished his oration, a muleteer came up and contradicted every word he had uttered.

We shall now pass over a considerable extent of country without entering into any minute description, for two reasons: 1st, that Persian towns and villages, and the sandy tracts which frequently separate them, bear such a similarity one to another, that an idea of the whole may be obtained from a description of a few;—2nd, that in our former Supplement we carried the reader through a considerable extent of Persian territory, in the route from Bassora to Teheran. We shall therefore traverse this route nearly at right angles, and suppose our fellow travellers to have performed the journey from Ispahan to Tabriz, a distance of about five hundred miles. Tabriz is in the midst of a mountainous country, inhabited by Koords, a semi-barbarous nation; and from thence the course is nearly westward to Constantinople, along the northern part of Asia Minor; the distance between the two cities being probably about twelve or thirteen hundred miles. A short description of Tabriz was given in the last Supplement; and we shall now take our departure from thence in the way to Constantinople.

Mr. Fraser, who travelled from Tabriz to Constantinople in the midst of a severe winter, performed the first hundred miles of the journey in two days, through a rocky and mountainous country, which everywhere showed indications of the unsettled state arising from the contiguity of three great empires, Russia, Persia, and Turkey. The termination of this stage is Khoe, a fortified town of considerable size, with an extensive bazaar, and a number of good houses. The town is environed by pleasant gardens, and is situated in a cultivated plain at the foot of a chain of mountains.

Khoe is near the frontiers of Persia and Turkey, having the Persian province of Azerbijan on the east, and the Turkish province of Armenia on the west. All around this district, however, the inhabitants are such as are little disposed to respect either Persian or Turkish authority: they are Koords, possessing much of the independent spirit so often observable in mountaineers. The Koords, or Kurds, are the same people known under the ancient name of *Carduchi*, through whom Xenophon so hardly fought his way, when conducting the famous retreat of the Ten Thousand. They have still the same name, and are the same people; the boldest and the rudest in all Asia. Those pastoral pursuits which, on the high table plains of Tartary and Persia, vary and soften the habits of war and plunder, are impracticable in a region which presents little else than rugged steeps, frightful ravines, and narrow valleys. The Koords, though much addicted to plunder, have, however, the characteristic virtue of barbarians, a frank hospitality, and also a pride of pedigree founded on a national existence which may be traced to a high antiquity. Through this region the traveller finds his way as well as he can, passing through rocky defiles, over mountain passes, along the banks of streams, and through thinly scattered villages, hiring horses or mules from one station to another, and taking his chance for a cottage or barn to sleep in at night. In part of this district, almost within view of Mount Ararat, is a singular mountain strong-hold or fortress called Makoo, situated on the brink of a ravine through which a stream flows. On the left bank of the stream the rock rises perpendicularly to a height of five hundred feet; and from a point about fifty feet below the summit of the rock is a cavern or recess, formed by an inward sloping of the rock, measuring

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six hundred feet by one hundred. Across this recess has been built a wall of stone, enclosing a portion of ground which constitutes a fort. A garrison can thus be placed at a height of three or four hundred feet above the level of the stream below. There is besides this a second recess in the perpendicular face of the rock, leading to apartments and granaries, where a large reserve of soldiers and of provisions can be kept concealed. It is supposed that this strong-hold was the work of the Armenians in past ages, when they had to defend themselves from persecution.

Leaving Mount Ararat on the north-east, we come to the town of Bayazid. This is a singular-looking place; being built among the clefts on either side of a high rugged mountain, while a projecting rock is crowned by the castle. Mr. Fraser remarks concerning its singular position:—"You do not see half of it until you climb up and get into it as into a bird's nest. One wonders what tempted men to choose a spot so unpromising for a city, even in regard to security; for not only is it commanded on all sides, but the inhabitants themselves have a most difficult ascent to surmount every time they leave and return to their homes, with the thousand other inconveniences that must attach to so lofty a dwelling. Except in India, I never saw so sharp and vile an ascent to a fort; and the pathways being covered with ice, it was a miracle how our smooth-shod horses got up, and that we escaped falls."

Bayazid being almost close to the frontiers, had been recently visited by a Russian force, which had greatly devastated it. Mr. Fraser found scarcely one house in a hundred inhabited: of these few were in repair; and the great magazine of fuel for the people of the place was the beams and wood-work of the abandoned dwellings. It is necessary to give a brief explanation of the political condition of this town, to estimate the cause of such disasters. All the regions in the neighbourhood of Mount Ararat are inhabited by Koords, rude mountaineers, who have but few ties of sympathy either with Turkey, Persia, or Russia. But it so happens, that in consequence of the mutations which those empires have undergone, all three now meet at or near Mount Ararat; and the dwellers in the immediate vicinity feel the effects of this most sorely. Bayazid is properly a Koordish city, although nominally within the Turkish dominions; but about twenty-five years ago, the troops of the neighbouring pacha of Erzeroum attacked the city and carried off many of its treasures. When the town had somewhat recovered from the effects of this inroad, it had a similar visit from the Persians who took away most of what the Turks had left. Still the population remained in the city, however much injured and robbed; but a third visit from the third neighbouring empire—the Russians—was incalculably more calamitous than the other two, and occurred about ten or twelve years ago. More than ten thousand Armenians and Koords were driven from the city and carried to the Russian provinces, where many of them perished. Mr. Fraser remarks:—"The finishing blow was reserved for Russia, who, by utterly depopulating both town and country, and pillaging the little that had been collected since past misfortunes, deprived both of the means of renovation, while they wantonly destroyed what they could not carry off. It is scarcely possible that the place can be repeopled."

As the reader never now hears of an Armenian king and government, it may be well to state what are the events which have rendered this people distinct from Turks, Persians, and Russians. Armenia once formed a considerable kingdom, including, but principally to the south-west of, Mount Ararat; and comprising districts now divided between the three empires. The Armenians trace their origin back to a remote period in history; indeed they have a tradition that the first ruler of that country was the great grandson of Japhet, the son of Noah. Be this as it may, the Armenians appear to have been for some centuries governed by their own kings, who were occasionally conquered by the powerful monarchs in their neighbourhood. It then became a Grecian province, afterwards a Roman one; then became divided between the Romans and the Persians; and the inhabitants suffered bitter persecutions for having embraced Christianity, which was hateful to the Persian worshippers of Zoroaster. At length the decline of the Persian power and the rise of the Saracens transferred the contest to new parties; and Armenia suffered repeatedly from attacks on all sides; its native princes being supported or deposed, as best suited the interests of the contending parties. When the Turks sallied from Central Asia towards Constantinople, Armenia was in their direct line of route; and the attacks of the Turks became so fearful, that about the year 1400, the persecuted Armenians resolved to abandon their country altogether. Since that time they have never been known as a collected nation; but, something like the Jews, have become wanderers and traders in other countries. They have retained an imperfect form of Christian faith throughout all their troubles, and are generally respected in private life. As merchants they are found in every part of Asia, and in almost every part of Europe; a general spirit of toleration being shown towards them, although they have no longer a distinct country. When the reader therefore hears of Armenians, he must not conclude that they are inhabitants of Armenia; but Asiatic Christians, descended from those who once inhabited the kingdom of Armenia, now a Turkish province.

It may likewise be desirable to state, in explanation of the situation of the district we have now reached, that the *Koords* are in general the inhabitants of the mountainous district near the frontiers in Turkey and Persia. Part of the Koordish territory, or Koordistan, is included in Persia, and the other part in Turkey: but the hardy mountaineers view all the three neighbouring empires very much in the light of hostile states, and follow few laws but the law of the strongest. Bayazid has been more properly a Koordish city than a Turkish one; but the disasters which it has experienced show in how precarious a position the Koords are placed. There are not wanting indications that this part of Armenia will one day belong to Russia, whose giant empire is almost yearly increasing in extent. For our present purpose, however, we may make this summary for the reader's guidance;—that the country at which we have arrived is nominally Turkish; that it is properly a portion of Armenia; and that the principal inhabitants are and have long been the rude hardy Koords.

We now leave Bayazid, and proceed westward on our journey. Mr. Baillie Fraser visited Asia Minor and Persia, during the winter of 1834, on political business connected with the English government; and the necessity for travelling as rapidly as possible, in spite of unfavourable weather, frequently led him into very dreary scenes; for although the latitude of Armenia and the neighbouring districts is as far south as the warmest parts of Italy, yet the elevated position of the country causes the temperature to be very cold, especially in the winter. It is thus that we read, in that gentleman's narrative, of piercing winds, overwhelming falls of snow, icy paths, and inclement temperature. We shall therefore avail ourselves likewise of the assistance of those travellers who have performed the journey in more congenial weather.

A few miles from Bayazid, Mr. Fraser sought shelter in a Koordish cabin, almost buried beneath the ground. After descending through a sort of irregular passage, he says:—"Our peregrinations terminated in a sort of little hole, scantily lighted by a small orifice in the roof, with a chimney, in which was smothering a fire of wet dung-cakes. It seemed to be the domicile of a favourite horse and a pet ewe: the latter we ousted; the former still retained its berth behind a sort of bar, so contrived as to prevent further intrusion on its part, and mark the boundary of our domain, where it chewed its hay,—a very unoffending neighbour. After my eyes had become somewhat accustomed to the dark and smoky atmosphere, I left our den, to peer about a little. In one neighbouring cavern were stabled a number of horses; in another were congregated a collection of most unlovely women, children, and sheep; from a third there was pouring forth a multitude of cows and year-olds that nearly upset me. There was not much pleasure in all this, so I returned to our room, where mumeds had been spread; but scarcely was I seated when in rushed a great he-goat, with a bound and a 'baa-a-a!' followed by his two wives, probably the rightful occupants of some corner usurped by us, who stopped short when he saw us, and seemed disposed to do battle for his privileges." Mr. Fraser found, on many such occasions as this, that he could purchase the good services of the inmates by a cup of tea, a beverage to which they were but little accustomed. He carried a stock of tea and sugar with him; and after having refreshed himself with the beverage, he boiled and re-boiled the leaves, adding an extra dose of sugar to compensate for the want of strength.

From Bayazid to Erzeroum the traveller meets with little but Koordish villages, scattered at wide intervals through a mountainous district, the cold of which, in winter, is far greater than is any where experienced in Britain. On

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A PERSIAN BREAKFAST.

reaching Erzeroum, the traveller enters the first important Turkish town in this part of Asia Minor. Sir Robert Ker Porter describes this town as containing a population of about sixty thousand, of whom fifty thousand are Mohammedans. It contains forty-five mosques and two churches. Two of the most ancient mosques are fancifully ornamented with bricks and coloured tiles. The lofty domes of these mosques, together with the glittering minarets of others, rising above the fortified walls of the governor's palace, give a delusive splendour to the appearance of the town when seen from a little distance. The whole town is defended by high double walls, well built, and additionally strengthened with lofty towers; the outer wall being supported by a deep ditch.

The dresses of the inhabitants are often exceedingly gay, and indeed the rank of the wearer is scarcely discernible through the showy texture of his dress. Sir Robert Ker Porter observes: "The well-known flowing garment and large turban of the Turk, are common alike to the tradespeople and highest classes; the chief difference lying in the colours and materials: but the gaiety, and even splendour, of them all often exceed imagination, and so completely confuse ranks to the eye, that an inexperienced foreigner, gazing at a procession of these stately personages, moving solemnly along in their motley attire, could not possibly distinguish the degree of one from another. I remember, on entering the town of Kars, (a little eastward of Erzeroum,) meeting a most gorgeously apparelled gentleman, who, from his gravity, and majestically-slippered walk, I might have mistaken for the pacha's vizier, had not a string of little tallow candles in one hand, and a plate of sour cream in the other, proclaimed his title to some humbler calling."

But since the last-mentioned traveller visited these countries, Erzeroum has been doomed to suffer the misery attendant on hostile attacks. It was a flourishing place of trade until 1829, when the Russian Count Pascovitch overran the country, and partly by persuasion, partly by force, caused nearly one hundred thousand Turks, Armenians, and Koords, to leave their native country, and pass into the Russian territory. Of this number seven thousand were from Erzeroum; and the misery and cruelty which they experienced from the Russians have given rise to a deadly hatred on the part of the natives. Indeed it is lamentable to see the state of feeling existing in and around this district: let the reader look at a map of that part of Asia situated near the south-east margin of the Black Sea, and he will find a region where Turks, Koords, Persians, and Russians mutually detest each other, and only join interests occasionally, when two of them are attacked by a third more powerful than themselves.

As we depart westward from Erzeroum, we leave by degrees the region inhabited by the Armenian Koords, whose villages are formed of houses built under ground, the earth that is excavated being heaped about the walls to aid in the exclusion of wintry cold. As darkness closes in, a plentiful supply of wood enables the inmates to keep up a blazing fire; but when they require light for other purposes, they make use of the same sort of candle-fir, or splinters of fat turpentine pine, which are used in the highlands of Scotland. These portions of the wood are produced by a disease in the common fir, which produces a congestion of its resinous juices to the part affected; and the tree is cut down for the sake of this alone, or the part is cut out, leaving the rest to decay of itself. The domestic economy of these wretched hovels may be estimated from the paragraph quoted from Mr. Fraser, respecting his night's sojourn in one of them.

Travellers in this part of the Turkish territory frequently perform their journey by Tatâr, that is, accompanied by a government courier or guide, called a Tatâr, and travelling on horseback with as few stoppages as possible. These Tatârs are to be hired at the chief cities, and are men of wonderful energy and hardiness. On the occasion of the escape of Napoleon Bonaparte from Elba, the British Consul at Constantinople hired a Tatâr to convey the information to the British Consul at Demavund, a place about sixty miles beyond Teheran in Persia. The man mounted his horse, and performed the whole journey, over mountains, and through valleys and plains, in seventeen days, the distance being about 2000 miles. It was with such a guide, and on such a plan as this, that Mr. Fraser made his journey; and it is thus that the term "Tatâr journey" is given to his narrative. There are, besides, other guides, not connected with the military or government departments, but attached to the Turkish post-houses, and hired by travellers.

Trained from childhood among the animals of which they have the care, they are good grooms and admirable riders; and, accustomed to brave the road and its dangers in all weathers, they become bold, intrepid, and skilful guides in this part of the country. These men, who are called *Seorajees*, are as remarkable in appearance as in character. They wear large shulwars, or riding-breeches, often highly embroidered; a short Turkish or Mamluc jacket, frequently of coloured velvet, and decked with faded finery; a striped silk or cotton vest, the skirts of which are stuffed into the trousers; huge pistols, or a yatagan, or both, protruding from their broad leathern girdle and sash. On the head they wear a turban, wound rather loosely; and they wrap their legs and feet in pieces of rag, cotton, or woollen, winding them over and over again, like surgical bandages on a fractured limb. Over these bandages are large boots, or laced sandals made of raw hide.

With such guides, then, we proceed on our journey, and a few miles after leaving Erzeroum, we cross the westernmost branch of the upper Euphrates, that noble river which flows into the Persian Gulf by the same mouth as the Tigris. Here we come to the boundary of what is generally deemed Armenia, and enter on the Turkish province of Pontus, a country of much notoriety in ancient times, having been the seat of a flourishing kingdom, under Mithridates the Great. The kingdom of Pontus was conquered by Julius Cæsar, and made a Roman province, but it was often governed by monarchs who were tributary to the power of Rome.

At about thirty-six miles from Erzeroum is Ashkala, a pretty village inhabited by a small number of families; and further on is a similar village called Kara Koulak, the scene of many conflicts between the semi-barbarous tribes of the neighbourhood. At another village, named Mama Khatoun, are some remarkable buildings, which Mr. Morier was told were built as a love-token by a wealthy Turk to his mistress. These buildings are situated close to the village, and consist of a caravanserai, a mosque, a bath, and a tomb, all constructed of fine white free-stone, and finished in a very excellent manner. The caravanserai is a hollow square, with a gate on the eastern face; round the court are built small rooms arched in a very solid and symmetrical style; and there are also two vaulted chambers, each fifty yards long by forty broad, for the accommodation of the horses and mules of travellers. In the middle of the square is an arched chamber, erected probably as a cool retreat in summer. The mosque is situated on the right of the caravanserai, and is entered by a small court yard, from which a vaulted peristyle leads under the dome into the principal chamber, where is a stone pulpit. The fine materials and admirable masonry of this dome are said to contrast strikingly with the general character of Turkish buildings in this part of the country. Close to the caravanserai is the bath; and on the other side are the remains of another building. Nearly facing the caravanserai is a small round temple, supposed to be a tomb, enclosed by a circular wall, which is entered by a gateway of Saracenic architecture. The interior of the round temple is arched, and carved with a variety of ornaments.

In various parts of Asia Minor are towns bearing the name of Kara Hissar. This implies "black castle," and is generally applied to a fortress built on a hill. One of these is found on the road which we are now traversing. The position of the fortress seems inaccessible, the rock on which it stands resembling that of the Castle of Edinburgh, but nearly twice as high. It spreads entirely over the summit of the hill; but the most formidable of its towers appear on the northern point. Beneath the western brow, and just on the slope of the rock where the declivity is least abrupt, the greatest part of the town is built. The houses are mostly of two stories, and stand in ranges one over the other, as seen from a distance; two mosques and one minaret rise from among them. Sir Robert Ker Porter describes the mountain scenery in the vicinity of this hill fortress as being among the most sublime which he had met with in the East; as a country "of the wildest character; the whole consisting of endless ranges of dark, stupendous mountains, hurled together in the most rugged forms of chaotic contrasts. But this august assemblage of Nature's vastest materials expanded to even a terrible sublimity as we approached a higher region, where some tremendous convulsion of the earth seemed to have rent its mountain piles with more than ordinary rage. Heights and depths, and yawning darkness, affrighted the eye in our advance, though I thought it not improbable that the closing gloom of the evening, added to the natural blackness of the mountains, might, by confusing the outlines of objects, and mingling shadows with reality, exaggerate the awful appearance before me."

At the various villages which we have named, and at others of a similar kind, are post-houses, which are likewise the only inns in the place; and the following description will convey an idea of the sort of entertainment for travellers at these post-houses. Travellers and servants have to squat down to the same board with the people of the house, from the keeper to the meanest trencher-cleaner; and mingle their fingers in the great general dish. This huge mess stands in the middle of a tray, on a low circular table usually laid out with as many pieces of bread as there are guests. The other ingredients of the meal (breakfast) are commonly thickened milk, with two plates of curdy goat's cheese, a little honey, and some grape syrup. At mid-day, bread and dried or ripe fruit are given. At sunset, a kind of soup, and a stew of mutton, or goat's flesh, mixed with sweetened gravy or onions, and a pillau of wheat. The dishes are served in rotation, and placed in the middle of the tray; round which the eaters sit on their heels, ready with their fingers or spoons to dip into the dish. Such is post-house fare.

The town of Nixar is approached by a road descending the declivity of a mountain. Mr. Morier says that no description is adequate to paint the brilliancy and luxuriance of vegetation, and the picturesque forms of this region. Trees of every denomination grow here in the wildest profusion, whilst their roots are embalmed by the odour of myriads of flowers. Sir R. K. Porter likewise speaks of the valley of Nixar as a picture of rural prosperity and beauty; displaying a gently swelling ground, carpeted with verdure, and diversified with groves and sparkling rivulets. He adds, "The whole scene gave me an idea of some of the finest parts of Switzerland; a remembrance which had never been awakened in me before, by any landscape of the East; and it may not be irrelevant to recollect here, that it was from Cerazunt, on this shore of the Euxine (Black Sea), that Lucullus transplanted cherry-trees into Italy; and thence, in little more than a century after, they first embellished the gardens of Great Britain."

A little beyond this, and at about one-third of the distance from Erzeroum to Constantinople is a large and open town called Tokat, (supposed to be the ancient *Comana Pontica,*) situated at the foot of a lofty mountain, or rather pair of mountains, with a cleft between them. Numerous houses appear crowded together at the bases of the twin mountains, varied here and there by mosques and minarets. The town was said thirty years ago, to have contained one hundred thousand inhabitants; but this is in all probability a gross exaggeration. The bazaars were however very numerous, and everything common to Turkey and its wants seemed to be found there in plenty. Mr. Fraser, many years afterwards, proceeded on this route with such rapidity, frequently performing one hundred and twenty miles in a day, that he had not time to pay much attention to the objects and scenery among which he passed; but he speaks of Tokat as a noble old place, which, with its fine castellated rock and picturesque mountains behind, looked extremely grand in the moonlight, and appeared to be an extensive place, situated on a well-cultivated country. The city is seated on the banks of the Jekil-ermak, the ancient Iris. It is the centre of an extensive inland trade to and from all parts of Asia. Here are manufactories of blue morocco, silk stuffs, and copper vessels of all kinds. At this town the exemplary and lamented missionary, Henry Martyn, died on his way to Constantinople, October 6, 1812, in the thirty-second year of his age.

The next important place at which we arrive is Amasia, the ancient capital of Cappadocia, and the birth-place of Strabo. The city stands in the narrowest part of the valley of Amasia, and in the midst of bold, wild, and romantic scenery. Along the bottom of this valley flows the river Yekil-Irmak; and the town spreads over both banks. On one side of the river rises a magnificent pile of rock, on the nearly pyramidal summit of which lie the mouldering towers of the ancient citadel, surmounting the caverned openings into the royal tombs, which are excavated in the face of the hill. On entering the city, an English traveller is struck with the appearance of the ruins of a Christian church, part of which are mouldering to dust, and the remainder used as a Mohammedan mosque,—a melancholy transformation from good to evil. The streets of the town are narrow and disagreeable, as is frequently the case in Turkey; and the houses were estimated by Sir R. K. Porter

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at about six thousand. But the most interesting object to a visiter is the rocky fortress, mentioned by Strabo nearly two thousand years ago. Passing over a bridge at one extremity of the city, we begin to ascend a steep paved road leading up to the fortress, and soon arrive at some mouldering ruins, once a range of battlements and towers. Ascending twenty or thirty paces higher, we pass through a passage hollowed into the solid rock, to the length of six or eight yards; the entrance of which bears the marks of some former grated defence. This dark avenue leads to a ledge of rock, about six feet in width, and hewn out of the side of the cliff, up which it leads like a kind of ladder. After a farther ascent of about twenty yards, we come to the first sepulchral excavation, hewn in the rock to a depth of seventeen feet, forming a passage four feet wide by thirty-five high. Beyond this is a small, vaulted chamber, with sufficient space to contain a large coffin or sarcophagus. Numerous other tombs are found sepulchred in the solid rock; and it is supposed that they were excavated during the period when Cappadocia, of which Amasia was the capital, was a province of Persia under Darius Hydaspes.

We cannot stop longer at these ruins, but must proceed westward to the pass of Drekler-Daugh, in the direct route to Constantinople. A spur of the rock terminates in a bold perpendicular cliff twelve hundred feet high, at the foot of which a rapid stream runs; and midway in air, across the face of this rock, and at a height of about five hundred feet above the torrent, a pathway has been cut. This path is about ten feet broad, with a very low and precarious parapet at the outer edge. This path is about a quarter of a mile long, with a steep declivity at each end. Along such a path did Mr. Fraser travel in the depth of winter, when every spot of rock was covered with slippery ice, and the cold so intense as almost to benumb the faculties. Humboldt passed over much higher and narrower mountain passes; but he had not, except in some few cases, to conduct his mules over a solid icy path. Immediately after passing this rock, Mr. Fraser traversed another still more awful, as may be judged from the following vivid description:—"Our approach to it seemed to be through the very bowels of the mountain, in the bed of a furious torrent, where no man could have imagined a path to have existed; and from which, turning up a narrow fissure, we scrambled on in the darkness, (it was nine o'clock on a winter's night!) leaving all to the instinct of our horses, till we emerged far above, upon the very brink of a black abyss, along which we still continued ascending by a narrow rocky zig-zag path, paved here and there, but without any parapets, for a height of, I suppose, six or seven hundred feet. It was a frightful tug. You must know that the Turks do not *frost*, or sharpen their horses' shoes, as we do, to keep them from slipping on the ice, and here all was ice and melting snow; and the track was on the very verge of the precipice; there was no getting off to lead the horses, or walk: we did not even dare to stop. It was neck or nothing; a breathless scramble up-up; often holding on by the mane to keep from slipping off behind. Nothing but the conviction of this and of my own helplessness, embarrassed with great boots glued to the stirrups by ice, and our heavy cloaks frozen as rigid as a board in their folds, could have kept me in the saddle. The descent was not so long, but fully as dangerous, and even more horrible; for there you were constantly looking down into the black yawning gulf, from whence the far-off sound of the winter torrent came roaring up in fits as the wind sighed down the glen.

How different are our impressions of scenery according to the season when we view it! That which is all lovely and attractive when clothed in spring garments, becomes cheerless and dull in winter. Westward of the mountain pass which we have just described are the valley and town of Tosia, which Mr. Frazer traversed twice during his Tatar journey, going and returning. On one occasion, all was ice-bound, cold, and dreary, and his thoughts were only directed to his onward progress. On the other occasion he was enraptured with the beauty of the valley, its splendid cultivation, its green picturesque hills and its multitude of waters. The neighbourhood of the town was laid out into little fields and paddocks, interspersed with orchards and gardens, divided by walls and hedges; the first built of mud and thatched, and partly overgrown with herbage; the latter, formed of barbary bushes and other thorns, with pollard elms, oaks, and willows. In the town too, all looked attractive; the mosques and many of the houses constructed of stone, and rising one above another in irregular groups and terraces, showed to much advantage.

Near about this part of the country the traveller frequently meets with Angora goats, so well known in Europe for their white and silvery coats. The town from which they take their name is situated about fifty miles southward of the direct path which we are following; but many of the valleys and villages all around Angora display large numbers of these goats, the sides of the mountains affording a rich pasture for them, and the villagers being employed in dressing and weaving hair. Around this district, too, are many kinds of manufacture, carried on, it is true, in a very primitive manner, and to a small extent; but still it is pleasant to have a respite from the details of oriental turbulence, and to hear of industry and its effect. At a pretty little town called Chirkiss, the inhabitants are celebrated for the bread and the honey which they produce, and which are regarded as great luxuries by the travellers who pass that way. At another small town called Garidi, are manufactories of copper utensils, and others for tanning and staining a stout and durable kind of leather. Great quantities of this leather are sent to Constantinople to be made up into boots and saddle-bags.

While travelling over the open country in the neigbourhood of the town of Boli, Sir R. K. Porter witnessed a scene which illustrates the wasteful and thoughtless conduct of Asiatics. The wood-cutters are accustomed to kindle a few dried branches to form a fire for their nightly bivouac; and this object once served, they are heedless as to the consequence of leaving the wood unextinguished, particularly if the wind be blowing. Sir Robert found the forest on fire, the flames bursting up with the appearance of volcanic eruptions, and producing a scene of horrid sublimity by throwing a red light over distant objects. The wind was roaring amongst the adjoining woods with a noise like the sea in a storm, and increased the impressive effect on the senses of the spectator.

Boli is the ancient *Hadrianopolis*. The modern town is a poor place, consisting of about a thousand houses, chiefly inhabited by Turks. There are a few Armenians, but no Greeks, although the villages in the vicinity are filled with them. It is the residence of a pasha of two tails. The plain, at the extremity of which it stands, is rich and fertile. About four miles to the south-east of the town, at a village called *Valajah*, are some mineral baths, to which the Turks resort in great numbers. There is nothing else remarkable in the neighbourhood.

We are now approaching rapidly towards Constantinople, and find the towns and villages losing much of their rude character. Ismit, or Is Nickmid, is the ancient town of Nicomedia, and has always been a place of some importance. It was an early residence of the kings of Bithynia; but its highest greatness began under Diocletian, who made it the metropolis of the Roman empire; the wealth of which he lavished in raising it at once to a rivalry with Rome. In this character it was soon supplanted by Constantinople, and many of its ornaments were probably carried off to embellish this new residence. The ruins of the ancient city are still visible; but very few Europeans have visited them for the purposes of study. The present appearance of the town is highly picturesque; with its curious old tenements, rising high as they do from the very shore of the gulf, up to the side of a steep mountain, in terraces, ridges, and ravines, all surrounded by vineyards and orchards, and interspersed here and there by picturesque burial-grounds, planted as usual with cypress trees.

At length we reach Scutari, the sea-port town immediately opposite Constantinople. In any other situation Scutari would rank as an important city, but standing as it does in the vicinity of Constantinople, it is considered merely a suburb to that great city. It stands on the Asiatic side, in a beautiful and cultivated plain, and presents a picturesque appearance from the mixture of trees and minarets. It carries on a very considerable caravan trade with the interior of Asia. A great forest near it contains the most splendid cemetry of the empire, as all the grandees of Constantinople seek to deposit their remains in Asia, which they consider as a Holy Land, in the possession of true believers, while Europe is almost entirely the prey of "the infidel." In this vicinity is situated the castle of the seven towers, used by government as a state-prison. And here we must beg the reader to consider for a moment the remarkable position of Constantinople. It is at the very extremity of Europe; but it is essentially an Asiatic city; and its position, in a commercial point of view, is one of the finest in the world. North-east of Constantinople is the Black Sea, south-west is the Sea of Marmora; and the two are connected only by

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a narrow neck of sea called the Straits of Constantinople, or the Bosphorous. The sea of Marmora again, is connected with the Mediterranean, still further to the south-west,—only by the narrow strait called the Dardanelles, anciently the Hellespont. Hence Constantinople commands the whole intercourse between the Mediterranean and the Black Sea, with the noble rivers flowing into the latter, such as the Danube, the Dniester, the Dnieper, and the Don; hence the importance of Constantinople as the capital of the Eastern empire and afterwards of the Ottoman empire; and hence the anxiety of the cabinets of Europe at the present moment respecting the future fate and possessorship of that city. To the east and south of Constantinople is the large and beautiful country of Asia Minor, through which we have just conducted the reader, and the whole of which is possessed by Turkey; north-west is the large country of European Turkey; and south-west, after passing through the sea of Marmora, is the Levant or Archipelago, a large bay stretching northward from the Mediterranean, and separating Greece from Asia Minor, studded, too, with numerous islands. Whenever our readers meet in the public journals with a notice of political or diplomatic occurrences between the various European powers at Constantinople, it may be useful to remember that this Archipelago, or cluster of small islands, as well as the Dardanelles and the Sea of Marmora, must be traversed before communication of a maritime nature can be held with Constantinople. He will also be able to form some idea, especially with a map before him, of the reason why so great importance is attached by these powers to the Dardanelles. This narrow strait is, in fact, the key to Constantinople and the Black Sea.

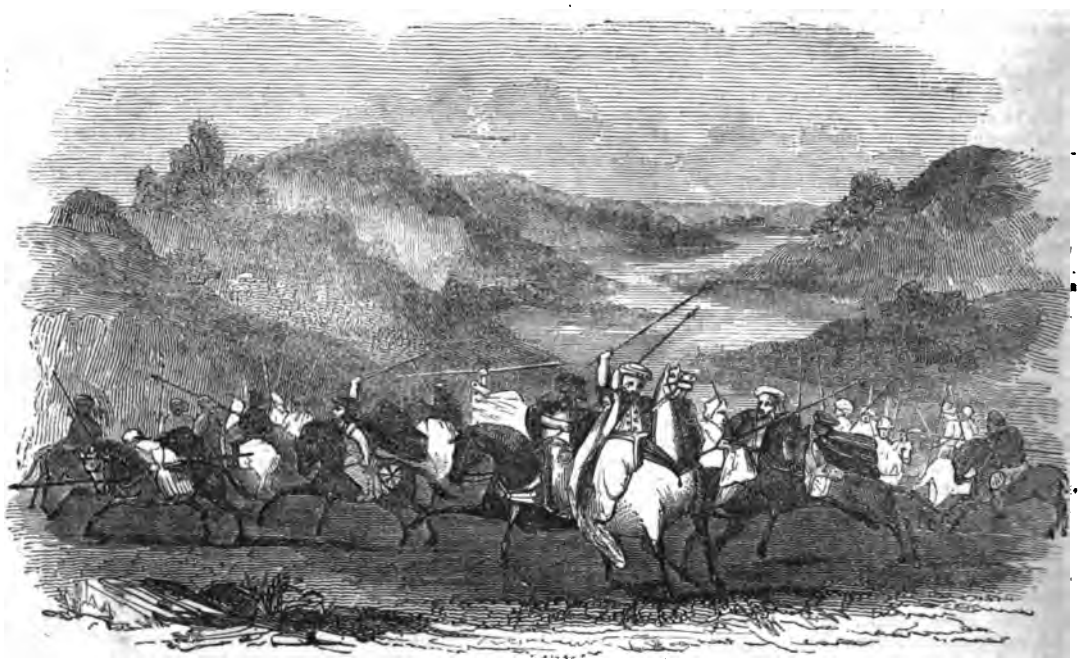
It will be remembered that in our First Route we conducted the reader to Astrakhan in the Caspian Sea, and there dismissed in a few words the remaining part of the journey through Russia. We shall follow a somewhat similar plan on the present occasion, for the following reasons. We hope shortly to accompany our readers in a steam voyage down the Danube, through the Austrian and Turkish Empires; and have also in hand a course of papers on Turkey and the Turkish provinces. These will collectively afford a tolerably clear insight into Turkish topography, and thus save the necessity of treading that ground on the present occasion. With regard to Constantinople itself; its mosques and bazaars; its seraglio; its oriental customs and peculiarities; here are abundant materials for two or three of our numbers, and must therefore be passed over here. A few general remarks, then, will conclude our present route.

English travellers proceeding from Persia to England, by way of Constantinople, pursue different routes after leaving that city. Lieut. Lumsden, in 1820, returned by way of Odessa on the Black Sea, Lemberg, Cracow, Vienna, Munich, Switzerland, and France, to England. Sir James Alexander, in 1826, passed through Constantinople, Shumla, Bukharest, Vienna, Frankfort, and so through Belgium to England. Mr. Fraser, in 1835, after leaving Constantinople, came by way of Adrianople, through Bulgaria and Servia into Austria, and thence through Belgium to England.

Let us endeavour to determine the number of miles over which our journey has carried us. When a traveller is proceeding with great rapidity on horseback, through countries where he knows not how soon he may be attacked by depredators, where he has to traverse mountain and valley, forest and plain, where he meets with few inns, and those few badly provisioned, where scientific instruments and books must be dispensed with, and where nothing analogous to an English coach-road exists,—we cannot look for a very accurate measurement of road gone over, and must not be surprised if the estimates of different travellers are somewhat at variance. In such a case we may take a mean between the estimates as the nearest approach we can make to correctness.

Lieutenant Lumsden estimates the journey by sea from Bombay to Muskat, at the entrance of the Persian Gulf, 1280 miles; from Muskat to Bushire 400; from Bushire to Shiraz, 170; Shiraz to Ispahan, 220; Ispahan to Tabriz, 540; Tabriz to Mount Ararat, 160. Sir James Alexander estimates the last four distances, respectively, at about 180, 280, 680, and 160. As Sir James took a somewhat circuitous route in some parts, we may perhaps estimate the distance from Bushire to Mount Ararat at about eleven hundred miles, or from Bombay two thousand eight hundred. From this point to Constantinople, along the northern part of Asia Minor, is estimated by Sir J. Alexander at about thirteen hundred miles, and by Sir R. Porter at about twelve hundred; taking the latter, we have four thousand miles from Constantinople to Bombay. Neither Porter, Alexander, nor Fraser, gives an itinerary from Constantinople to London, but Lieutenant Lumsden estimates the distance from Odessa on the Black Sea, through Russia, Austria, Bavaria, and France, to London, at about seventeen hundred miles. The route here taken is probably two hundred miles longer than the usual route from Constantinople *vid* Vienna and the Netherlands, to London.

We may therefore perhaps estimate the distance from Bombay to London, by our present overland route, by way of Bushire, Shiraz, Ispahan, Tabriz, Mount Ararat, Erzeroum, Constantinople, and Vienna, at somewhere about five thousand five hundred miles.



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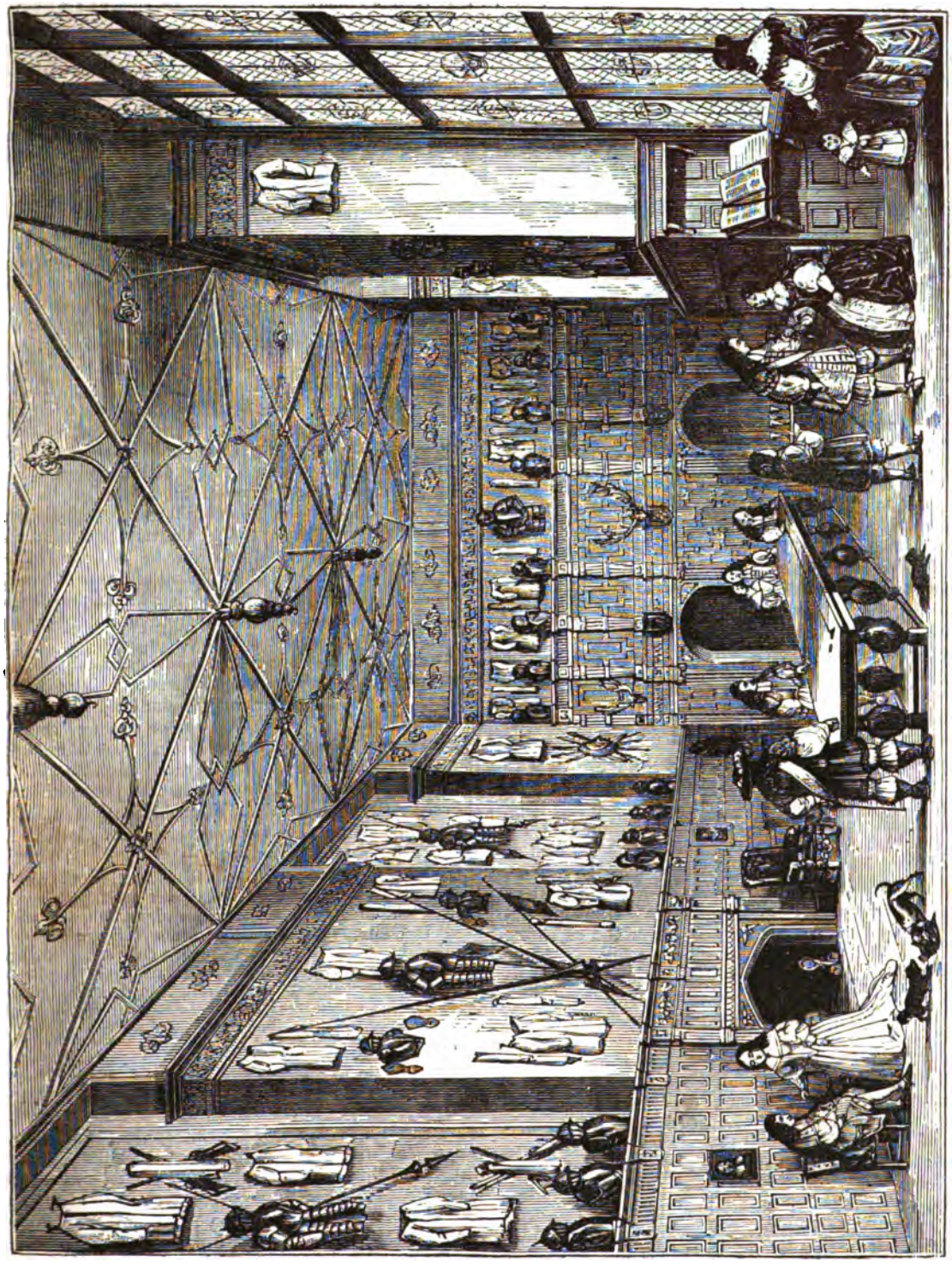

INTERIOR OF THE GREAT HALL AT LITTLECOATES, WILTS.

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LITTLECOATES, WILTS.

We have again the pleasure of presenting to our readers a cut from one of the beautiful prints in Mr. Nash's *Mansions of England in the Olden Time*, representing one of those rich interiors which form such striking features in that work

The Hall represented in our frontispiece forms part of the mansion of *Littlecot*, or *Littlecoates*, the residence of General Popham; and is situated partly in the parish of Chilton-Foliot, and partly in that of Ramsbury, Wiltshire. The house was erected in the early part of the sixteenth century, by the family of the Darrels; and was some years afterwards, sold to Sir John Popham, Chief Justice of the Court of King's Bench in the reigns of Queen Elizabeth and King James the First. The family of the Pophams was very ancient, and of great note. They were first raised to the rank of nobility by the Empress Matilda and her son Henry the Second. One of them was styled, on account of the offices he filled, "Chauncelar of Normandy, Capitaine of Vernoile, of Perche, of Susan, and Bayon, Tresoror of the King's Household." His body was buried in the Charter-House Church, London; and his effigy was fixed over the door of St. Sepulchre's Church, he having contributed large sums towards its erection. He is said by Leland to have left "a very great treasure in strange coynes." Sir John Popham, the chief Justice to whose hands Littlecoates passed, was among the most eminent branches of the family, having adorned his high station equally by his ability and his integrity. The descendants of this gentleman, in the male line, inherited the mansion till the beginning of the present century, when it passed by will to General Edward Leybourne, who thereupon assumed the name of Popham. In the family of this gentleman we believe the estate still remains.

The mansion of Littlecoates was built, as has been remarked, "about the time of the termination of feudal warfare, when defence came no longer to be an object in a country mansion." The park in which it is situated comprises an area of about four acres in extent, and is adorned with groups of beautiful trees. On one side of it rises a lofty hill, crowned with wood, and forming a fine contrast with the luxuriant and level meadows spread along the banks of the river Kennet; a branch of which river runs through the garden, and there constitutes a preserve for fish.

Considerable alterations have been made in the exterior of the mansion in modern times; but the interior presents many of the features which it exhibited two or three centuries ago. On the first floor of the building is a noble picture gallery, one hundred and ten feet long, and hung with many curious portraits, painted in the sixteenth and seventeenth centuries; among which is one of Chief Justice Popham, and one of Nell Gwynne, by Verelst. There is also preserved here a curious piece of needlework, representing a large Roman tessalated pavement, which was discovered in the adjoining park by Mr. George, steward to the estate, in 1728. The Society of Antiquaries caused a plate of it to be engraved by Vertue, and a description to be written by Professor Ward. This pavement measured about forty feet by thirty-three, and seems to have formed the floor of a temple. It consisted of two divisions, the templum and sacrarium, answering to the nave and chancel of our churches. The templum, or outer part, which was nearly square, was ornamented with a compartment of figures inlaid, in the centre of which was a large two handled cup, supported by two sea-monsters with fishes tails, and behind each a dolphin and two conchæ, or shell-fish, probably in allusion to Neptune. Opposite was a border, with a similar cup, supported by two tigers. The floor of the sacrarium was a square, enclosing a circle. Within this circle was a smaller one, in which was a figure of Apollo playing on the harp; and in four surrounding compartments, four female figures representing the seasons, riding at full speed. One was exhibited holding a flower in her hand, and seated on a deer, to represent Spring; the second appeared seated on a panther, and holding a swan, as an emblem of Summer; the third, who rested her arm on a branch of a vine, rode on a bull, and personified Autumn; and the fourth, seated on a goat, without anything in her hand, denoted the barrenness of Winter. Exterior to the circle enclosing these figures were three compartments, each displaying a face of the sun, emitting bright and extended rays in the form of a semicircle; many conjectures have been offered respecting the nature and purport of this remarkable specimen of ancient art; but we need not dwell on them here.

We have said that the piece of tapestry, or needlework, representing this pavement, is preserved in the long gallery on the first story. On the ground floor is an apartment still more attractive as a relic or memorial of old times; we mean the Great Hall, represented in our frontispiece. This hall is very spacious, paved with stone, and lighted by large and very lofty windows. It measures forty-six feet in length, twenty-four in width, and twenty-five in height; and its walls are hung with numerous relics of ancient armour, such as coats of mail, helmets, cross-bows, old-fashioned pistols, carbines, leather jerkins, and other defensive and offensive accoutrements. Here is also a pair of elk's horns, measuring seven feet six inches from tip to tip. The old furniture of the room is preserved nearly in the same state as it was in by-gone days, and Mr. Nash has presented them with his accustomed fidelity. Among these articles of furniture is an old arm-chair, said to have been used by Chief Justice Popham; it is constructed of wood, curiously turned, and has a very lofty back, and a triangular seat. The centre of the hall is occupied by a large oak table, reaching nearly from one extremity to the other. This table probably formed the hospitable board on which in days of yore, the vassals were feasted by their lord. Mr. Nash, however, has represented this table as being the scene of the game of "shovel-board," a favourite pastime among the higher classes in the time of Charles the Second; and it appears not unlikely that the same table might serve both purposes.

As the game here alluded to is now quite osbolete, the reader may not deem a few remarks concerning it superfluous. *Shovel-board* was an inferior kind of billiards, in which a small object was struck or thrown, so as to pass to a particular part of the table. Strutt remarks, that the residences of the nobility, or the mansions of the opulent were not thought to be complete without a shovel-board table; and this fashionable piece of furniture was usually stationed in the great hall. Dr. Plott, in his *History of Staffordshire*, says:—

It is remarkable that in the hall at Chartley, the *shuffle-board table*, [it appears to have been spelt both ways,] though ten yards one foot and an inch long, is made up of about two hundred and sixty pieces, which are generally about eighteen inches long, some few only excepted, that are scarce a foot; which, being laid on longer boards for support underneath, are so accurately joyned and glewed together, that no shuffle-board whatever is freer from rubs or castings. There is a joynt also in the shuffle-board at Madely Manor exquisitely well done.

The general width of these tables is about three feet, and the surface is as level and smooth as it can be made. The player stands at one end of the table, and near the other end is a mark which determines the success of the player. This mark or line is drawn across the table at a distance of three or four inches from the end, which end is unprovided with any ledge or stay, and at about four feet distance from this mark or line another is drawn, parallel to it. The toys with which the game is played are flat metal weights, of which each player has four. Each one in turn impels a weight from the near to the remote end of the table; and his object is to use such a

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degree of force as shall lodge the weight in the narrow space between the farthest mark and the remote end of the table. If the force is too weak to carry the weight beyond the nearest line, or if it is so powerful as to drive the weight off the table at the other end, it counts for nothing; if the weight rests on the farthest line, or in any part of the space between the two lines, the player counts one; if it rests in the space between the farthest line and the edge of the table, he reckons two; and finally, if it reaches the edge so exactly as to incline a little over without falling, it is deemed the finest kind of play, and counts as three. Each person plays in turn; and when two only are playing, eleven is "game;" but when four play, the number to form game is higher..

Such was a favourite indoor amusement two or three centuries ago; and though far inferior to billiards, it required some skill to attain success at it. In one of the Harleian Manuscripts is a passage which introduces us to Prince Henry, son of King James the First, playing at this game:—

Once when the prince was playing at shoffle-board, and in his play changed sundry pieces, his tutor being desirous that even in trifles he should not be new-fangled, said to him, that he did ill to change so oft; and therewith took a piece in his hand, and saying that he would play well enough therewith without changeing, threw the piece on the board; yet not soe well, but the prince, smileing thereat, said, Well throwne, sir. Whereupon, Master Newton telling him that he would not strive with a prince at shoffleboard, he answered, You gownsmen should be best at such exercises, being not meete for those that are more stirring. Yes, quoth Master Newton, I am meete for whipping of boyes. And hereupon the prince answered, You need not vaunt of that which a ploughman or cart-driver can doe better than you. Yet can I doe more, said Master Newton, for I can governe foolish children. The prince respecting him, even in jesting, came from the further end of the table, and smiling said, while he passed by him, Hee had need be a wise man himself that could doe that.

AFFLICTIONS.

As a traveller, who having just escaped the fury of a lion, encounters immediately afterwards an angry bear,
And who, delivered from his new peril, and thankfully reaching his own gate,
Should no sooner rest his hand upon the wall, than a serpent should dart forth from it, and bite him,
So does one affliction after another lie in wait for me;
And the latest that I fall into always seems the most grievous to endure.

ST. GREGORY; *Book of the Fathers.*

THE most imposing object in the vegetable kingdom is the solemn forest. Single trees on a plain, or a sufficient number to form a grove, are objects of beauty, and consequently of pleasure. The dark, close forest carries the mind back through an indefinite lapse of time, and conveys to it a sentiment of the actual presence of the work of the Creator, as it came from his hand unchanged by any act of man.

With this seeming stamp of originality on it, yet the long-enduring forest which appears ever the same, is silently and hourly submitting to the laws of Nature, ever varying and changing; and though life among its members, like life among the members of the human family, has its limits, and within some definite term not one of all that are seen will remain, yet it is still the same forest to the human eye. From the most deep-rooted and long-enduring of this vast assembly, down to the many perfect vegetables which are invisible to the naked eye, there are general laws of beginning, continuing, and ending the term of life.

Yet, between these extremes there are many genera, or kinds, capable of precise and well-understood classification. Among these classes each has its own order of being; and these are again subdivided, and known by distinctions of form, internal structure, and in foliage, in flowers, in fruits, in juices, and fragrance. Each of them seems to have been given for some purpose, pleasing, convenient, or necessary to the animal kingdom.—S.

HYPOCHONDRIACISM.

OF the miseries the hypochondriac experiences, the following extract of a letter to a physician, will afford a specimen:—"My poor body is a burning furnace, my nerves red-hot coals, my blood is boiling oil; all sleep has fled, and I am suffering martyrdom. I am in agony when I lie on my back; I cannot lie on either side; and I endure excruciating torture when I seek relief by lying on my stomach; and, to add to my misery, I can neither sit, stand, nor walk." The fancies of hypochondriacs are frequently of the most extraordinary nature; one patient imagines that he is in such a state of obesity as to prevent his passing through the door of his chamber or his house; another impressed with the idea that he is made of glass, will not sit down for fear of cracking; a third seems convinced that his head is empty; and an intelligent American, holding a high judicial seat in our West Indian colonies, could not divest himself of the occasional conviction of his being transformed into a turtle.

The most melancholy record of the miseries of hypochondriacism is to be found in the diary of Dr. Walderstein of Gottingen. He was a man much deformed in person, and his mind seemed as distorted as his body. Although of deep learning and research, and convinced of the absurdity of his impressions, yet he was unable to resist their baneful influence.

My misfortune, (says the doctor,) is that I never exist in this world, but rather in possible combinations created by my imagination to my conscience. They occupy a large portion of my time, and my reason has not the power to banish them. The malady, in fact, is the faculty of extracting poison from every circumstance in life, so much so that I often felt the most wretched being, because I had not been able to sneeze three times together. One night when I was in bed I felt a sudden fear of fire, and gradually became as much oppressed by imaginary heat as though my room were in flames. While in this situation, a fire-bell in the neighbourhood sounded, and added to my intense sufferings. I do not blush at what might be called superstition, any more than I should blush in acknowledging that my senses inform me that the earth does not move. My error forms the *body* of my judgment, and I thank God that he has given it a soul capable of correcting it. When I have been perfectly free from pain, as is not unfrequently the case when I am in bed, my sense of this happiness has brought tears of gratitude in my eyes. I once dreamt, (adds Walderstein,) that I was condemned to be burnt alive. I was very calm, and reasoned coolly during the execution of my sentence. 'Now,' I said to myself, 'I am burning, but not yet burnt; and by-and-by I shall be reduced to a cinder:' this was all I thought, and I did nothing but think. When, upon awaking, I reflected upon my dream, I was by no means pleased with it, for I was afraid I should become *all thought, and no feeling.*

It is strange that this fear of thought, assuming a corporeal form in deep affliction, had occurred to our poet Rowe, when he exclaims, in the *Fair Penitent,*

Turn not to Thought my brain.

What is very distressing, (continues the unfortunate narrator,) is that when I am ill I can think nothing, feel nothing, without bringing it home to myself. It seems to me that the whole world is a mere machine, expressly formed to make me feel my sufferings in every possible manner.

What a fearful avowal from a reflecting and intelligent man. Does it not illustrate Rousseau's definition of reason—*the knowledge of our folly.*

[MILLINGEN'S *Curiosities of Medical Experience.*]

IN love of home, the love of country has its rise; and who are truer patriots or the best in time of need,—those who venerate the land, owning its wood, and stream, and earth, and all that they produce? or those who love their country, boasting not a foot of ground in all its wide domain?—DICKENS.

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ON CHESS.

VII. CHESS-WRITERS AND PLAYERS.

CHESS-KING, AS DESIGNED BY FLAXMAN

High in the midst the rev'rend kings appear,
And o'er the rest their pearly sceptres rear:
One solemn step, majestically slow,
They gravely move; and shun the dang'rous foe;
If e'er they call, the watchful subjects spring,—
And die with rapture if they save their king:
On him the glory of the day depends:
He once imprisoned, all the conflict ends.—SIR W. JONES.

THE knowledge of the game of chess has been extensively diffused for many centuries past, as may be seen by the numerous manuscripts and printed treatises which have appeared on the subject. The latter have been written in, or translated into, nearly all the European languages, and several of the Oriental ones; and it may perhaps prove interesting to such of our readers as have not met with any notice of these works, to take a cursory glance at them, and at the players and modes of play they celebrate.

As early as the commencement of the ninth century, the game of chess was in such high repute in the East, that Al Amîn, Khalif of Bagdad, is said to have commanded the different provinces of his empire to send to his court all such persons as were the most expert at chess, to whom he allowed pensions, and passed the most considerable part of his time among them. On one occasion, when he was playing at chess with his freed-man Kuthar, without the least apprehension of impending danger, Al Mamûn's forces pushed the siege of Bagdad with so much vigour, that the city was upon the point of being carried by assault. On being warned of his danger, Al Amîn cried out "Let me alone! for I see cneck-mate against Kuthar." This anecdote is quoted by Dr. Hyde from an Arabic history of the Saracens. At this period (about the year 808), chess was not unknown to the monarchs of the West. Charlemagne is represented, in the curious and ancient French romance called *Guerin de Montglave*, as being exceedingly fond of the game. This romance was alluded to in our *History of the Origin of Chess*, and the anecdote there referred to is as follows:—"I bet," said the emperor to the hero of the tale, "that you would not play your expectations against me at chess, unless I were to propose some very high stake." "Done," replied Guerin, "I will play, provided only you bet against me your kingdom of France." "Very good, let us see," said Charlemagne, who fancied himself to be strong at chess. They play forthwith, Charlemagne loses his kingdom, but laughs the matter off as a joke. Guerin, however, is not disposed to view it in this light, and swears by St. Martin and all the Saints of Aquitaine that he must receive some compensation. The emperor then gives him permission to conquer Montglave (Lyon) from the Saracens, and surrenders to Guerin all his right in that city.

Other romances of that period contain notices of the game of chess, and it is in fabulous histories that we get the first mention among western authors of this celebrated amusement. There is nothing to induce the supposition that at this time, the European players had attained any great degree of skill at chess; but we find mention made of a player at Tripoli, in Syria, who in the year 970 was famed for going through the game blind-fold. This man, Jusuph Tchelebi by name, was accustomed to use very large chess-men, and to play not by naming the moves, but by feeling the men, and placing them in the squares or removing them from the board as occasion required. At the period we are now speaking of, the chess-table seems often to have been the scene of fierce dispute, and violent anger. Two or three fatal affrays are represented by the French romancers to have taken place, in consequence of the termination of a game of chess, and though we are prepared for highly-coloured pictures in works of this description, there is no doubt but that some measure of truth is to be found in such recitals, and that they had their foundation in the customs of the times. In a book published at Stockholm in the Icelandic language, King Canute, so celebrated for his wisdom, is described as resenting very deeply a provocation received at chess. The passage runs thus:—

As King Canute and Earl Ulf were playing at chess, the king made a false move, in consequence of which the earl took one of his knights; but the king would not allow this, and replacing the piece, insisted on his playing differently. The earl waxed angry, overturned the chess-board, and was going away, when the king called after him, saying "Ulf, thou coward, dost thou flee?" The earl returned to the door, and said, "You would have taken a longer flight in the river Helga, had I not run to your assistance when the Swedes beat you like a dog; you did not then call me Ulf the coward." The earl then retired, and the next morning the king ordered him to be killed.

Of the fondness of the Danes for chess and dice we have an instance in the fact that when Bishop Etheric came to Canute the Great on important business, and entered the royal presence at midnight, he found the king and his courtiers busily engaged at these games, even at an hour which in those early times must have been considered a most unseasonable one for the purposes of amusement.

In an old book, called the *Anatomy of Melancholy*, where chess is recommended as "a good and wittie exercise of the minde for some kinde of men; but too troublesome, too full of anxiety," and "all but as bad as study" to others, it is given as an illustration of its tendency to promote a testy choleric feeling in him that loseth the mate, that "William the Conqueror in his younger years while playing at chess with the prince of France, lost a mate, and was so provoked thereat, that he knocked the chess-board about his adversary's pate, which was a cause afterwards of much enmity between them." The chess contest seems to have been afterwards carried on in much the same spirit between their sons, for we find that towards the close of William's reign (1087), he appointed his two sons, Robert and Henry, joint governors of Normandy, and these going together to visit the French king were entertained with a variety of sports. Henry played with the Dauphin (Louis le Gros), at chess, and won a considerable sum of money of him, which so much irritated Louis that he threw the chess-men at Henry's head, using at the same time

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offensive language towards him. Henry retaliated with blows; and the quarrel, it is said, reached such a height, that but for the interference of the Prince Robert it might have terminated fatally. John of Salisbury relates that in a battle between the French and English in 1117, an English knight seizing the bridle of Louis le Gros, and crying out, "The king's taken." Louis struck him to the ground with his sword, saying "Ne scais tu pas qu'aux échecs on ne prend pas le roy?" "Dost thou not know that at chess the king is never taken?"

We now approach the period when the first regular treatise on chess made its appearance. This was the work of Jacobus de Cœsollis, or Cesolis, presumed to have been written before the year 1200. Verci says that the original work was written either in Latin or in French, and that the Latin manuscript is still preserved in the University of Padua. Two manuscript copies of this work are preserved in the British Museum. The first is entitled *Liber moralis de Ludor Scaccor*, and it is a quarto of fifty leaves of parchment, twenty-nine lines on a page. The first page has a miniature border, in gold and colours, representing flowers, a peacock, and other birds, with two angels. The first letter, which is a Gothic M of about an inch square, is ornamented with a king playing at chess with a monk. The colours are vivid and the drawing is good; eleven more capitals are embellished with flourishes in gold, and the writing is neat and well-preserved. The other copy is written on paper, and unornamented. The work of Cesolis was translated into English by William Caxton, in 1474, but previous to that time there had appeared a curious manuscript of which we must first take account. It was called *A Morality on Chess*, and was ascribed to Pope Innocent III., but seems to have been written by an English monk named Innocent, about the year 1400. As it is not without its merits, and boldly points out the abuses which creep into the highest offices, we give it at full length; observing, however, that the description of the moves of the king and queen does not agree with that in the modern game, while the bishop's move is restricted to three squares, as in the "courier" game, which we shall have to notice hereafter.

This whole world is nearly like a chess-board, of which the points are alternately white and black, figuring the double state of life and death, grace and sin.

The families of this chess-board are like the men of this world; they all come out of one bag, and are placed in different stations in life. They have different appellations: one is called king, another queen, the third rook, the fourth knight, the fifth alphin (bishop), the sixth, pawn.

The condition of the game is, that one piece takes another; and when the game is finished, they are all deposited together, like man in the same place. Neither is there any difference between the king and the poor pawn: for it often happens that when the pieces are thrown promiscuously into the bag, the king lies at the bottom; as some of the great will find themselves after their transit from this world to the next.

In this game the king goes into all the circumjacent places and takes everything in a direct line, which is a sign that the king must never omit doing justice to all uprightly, for in whatever manner a king acts it is reputed just, and what pleases the sovereign has the force of law.

The queen, whom we call *Fers*, goes and takes in an oblique line; because women being of an avaricious nature, take whatever they can; and often, being without merit or grace, are guilty of rapine and injustice.

The rook is a judge who perambulates the whole land in a straight line, and should not take anything in an oblique manner, by bribery or corruption, nor spare any one; else they verify the saying of Amos, "Ye have turned justice into gall, and the fruit of righteousness into hemlock."

But the knight in taking, goes one point directly, and then takes an oblique circuit, in sign that knights and lords of the land may justly take the rents due to them, and their just fines from those who have forfeited them, according to the exigence of the case. Their third point being oblique applies to knights and lords when they unjustly exact.

The poor pawn goes directly forward in his simplicity; but whenever he will take he does so obliquely. Thus man, while he is poor and contented, keeps within compass and lives honestly; but in search of temporal honours he fawns, cringes, and forswears himself, and thus goes obliquely till he gains a superior degree on the chess-board of the world. When the pawn attains the utmost in his power, he changes to *Fers*, and in like manner humble poverty becomes rich and insolent.

The alphins are the various prelates of the church, pope, archbishop, and their subordinate bishops, who rise to their sees not so much by divine insipiration as by royal power, interest, entreaties, and ready money. These alphins move and take obliquely three points, for the minds of too many prelates are perverted by love, hatred, or bribery, not to reprehend the guilty or bark against the vicious, but rather to absolve them from their sins: so that those who should have extirpated vice are, in consequence of their own covetousness, become promoters of vice and advocates of the devil.

In this chess game the devil says "check" whenever he insults and strikes one with his dart of sin; and if he that is thus struck cannot immediately deliver himself, the devil resuming the move says to him "mate," carrying his soul along with him to prison, from which neither love nor money can deliver him, for from hell there is no redemption. And as huntsmen have various hounds for taking various beasts, so the devil and the world have different vices, which differently entangle mankind, for all that is in this world is lust of the flesh, lust of the eyes, or proud living."

ON THE CUSTOM OF THE MAUNDY.

THE reader may probably have noticed in Almanacs, that the day immediately preceding Good Friday in every year is called *Maundy Thursday*. The old customs connected with this day, and still partially observed, are very curious, and well worthy of general attention at this season of the year. But, before we proceed to detail them, it will be proper to state the opinions given as to the origin of the term *maundy*.

Our old writers, about the time of the Reformation, apply this word to the *commands*, then written "*commaunds*," of Christ, which He delivered to his disciples on the day before his crucifixion. These commands of our Blessed Lord related to the faith and practice of the future apostles while upon earth, and of the Christian church throughout all ages. He ordained the Holy Communion of His body and blood, to be observed by them and all faithful Christians till His second coming. He washed the feet of the disciples, (a common and necessary service in the East, which the climate renders desirable to be done,) in token of that humility which it behoved them to imitate; and He laid His affectionate injunctions upon them, that they should love one another as he had loved them. Christ was put to death on the Friday: the day before is thus termed "Maundy Thursday," as being the day of the last *commands* of our Lord, before the fulfilment of those sufferings in His own person, which should cleanse us from all sin.

Following the other authority, we find that Maundy Thursday is so named from the *maunds*, wherein were formerly contained gifts, which the king was wont to distribute on that day, to a certain number of poor persons at Whitehall. The Saxon word "mand," which afterwards became *maund*, is the name for a *basket*, (French *manne*,) and by consequence for any gift, or offering, contained in the basket. The sort of basket just referred to, is an open one with handles.

The day of which we speak was likewise once called *Shere* Thursday, (and by corruption *Chare* Thursday,) because as we are told, in ancient times, "people would that day shere theyr hedes and clypp theyr berdes, and so make them honest agenst Easter-day." In the miraculous legend of St. Brandon, it is related that he sailed with his monks to the Island of Sheep, about the year 565 A.D. This island, which abounded in sheep, was set down, in the ancient maps, in the middle of the Atlantic Ocean, near the Equator. Here on "*shere-*

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thursdaye, after souper, he wesshe theyr feet, and kyssed them lyke as our lorde dyd to his dyscyples."

We propose now to notice several celebrations of the Maundy, beginning with the practice of it in the reign of her present Majesty, Queen Victoria, and going back into previous reigns, as far as our means will allow; concluding with notices of foreign observances of this day.

In the *Times* newspaper of April 16th, 1838, we observe the following account of her Majesty's Maundy donations:—

The Queen's royal alms were distributed on Saturday by Mr. Hanby, at the almonry office, to the Maundy men and women placed on the supernumerary lists, owing to the difference of the ages between the late king and her present Majesty. Both men and women receive 2*l.* 10*s.*, and nineteen silver pennies, (being the age of the queen.) To the men, woollen and linen clothing, shoes, and stockings were given; and to the women, in lieu of clothing, 1*l.* 15*s.*, each. The Maundy men and women also received 1*l.* 10*s.*,—a commutation, instead of the provisions heretofore distributed.

As the foregoing comprises a substantial account of the present celebration of the Maundy, we need not dwell further upon it, except to make a few remarks on the silver penny, which is now coined expressly for this occasion.

Before the year 1672 there was no legitimate copper coinage in England: on which account the pecuniary donations of the sovereigns of England on Maundy Thursday were usually made in silver;—the silver pennies then in common use;—as many silver pennies being given to each individual as the years of the monarch's age; besides clothes and food, as will be presently related. Mr. Till, an experienced numismatist, passes a high eulogium on the beauty and production of the small pieces termed *Maundy* money. He considers them as finely executed, and well struck up; in some instances being like proofs; judging from the specimen now before us, they certainly merit this eulogium. The Maundy pennies are $\frac{7}{8}$ of an inch in diameter. They are by order of Government declared current coins of the realm; so that they could not be refused, if tendered in payment: still, they are not in reality intended for that purpose. Besides the pennies, four-penny pieces, three-penny pieces, and two-penny pieces are struck as Maundy money, and also used as presents for various officers attached to the crown, as well as to others.

We have seen that the practices of the Maundy are now considerably pared off: but, in order to give the reader some idea of the ancient customs of this day, we will select a few instances of the observances of by-gone years.

On Maundy Thursday, 1814, the royal donations were distributed at the Chapel Royal, Whitehall, according to annual custom. In the morning, Dr. Carey, the sub-almoner, and Mr. Hanby, secretary to the lord high almoner, together with others belonging to the lord chamberlain's office, and a party of the yeomen of the guard, distributed to seventy-five poor men, and the like number of women, (being as many as the king was years old,) a quantity of salt-fish, consisting of salmon, cod, and herrings, pieces of very fine beef, five loaves of bread, and some ale to drink the king's health. At three o'clock they assembled again, the men on one side of the chapel, and the women on the other. A procession entered of those engaged in the ceremony, consisting of a party of yeomen of the guard, one of them carrying a large gold dish on his head, containing one hundred and fifty bags, with seventy-five silver pennies in each, for the poor people, which was placed in the royal closet. They were followed by the sub-almoner in his robes, with a sash of fine linen over his shoulder, and crossing his waist. He was followed by two boys, two girls, the secretary, and another gentleman, with similar sashes, and all carrying large nosegays. The church evening service was then performed, at the conclusion of which the silver pennies were distributed, together with woollen cloth, linen, shoes, and stockings; and a cup of wine was given to each to drink the king's health.

The provisions were given away in large wooden bowls; the drinking-cup was made of maple. The bags containing the Maundy money were made of *white* kid: when gold was given away, it was put into a small *red* bag.

The ceremonial of the Maundy, as practised in 1731, consisted in distributing at the Banquetting House, Whitehall, to forty-eight poor men, and forty-eight poor women, (the king's age being forty-eight,) boiled beef and shoulders of mutton, with small bowls of ale, which is called *dinner*: after that, large wooden platters of fish and bread; viz., one large old ling, and one large dried cod; twelve red-herrings, and twelve white-herrings, all undressed; and four half-quartern loaves. Each person had one platter of this provision; after which they received shoes, stockings, linen and woollen cloth, and leathern bags, with one penny, two-penny, three-penny, and four-penny pieces of silver, and shillings; to each about four pounds in value. His grace, the Lord Archbishop of York, lord high almoner, performed the annual ceremony of washing the feet of a certain number of poor in the royal chapel, Whitehall, which was formerly done by the kings themselves, in imitation of our Blessed Saviour's pattern of humility. James II. is said to have been the last of our monarchs, who performed this ceremony in person.

In the year 1572, which was the thirty-ninth year of Queen Elizabeth's age, besides bestowing her maundy, her Majesty, as the kin s and queens of England had done before her, washed and kissed the feet of as many poor men and women as she herself was years old. This was done at Greenwich, on which occasion the feet of the poor persons were first washed by the yeomen of the laundry with warm water and sweet herbs; afterwards by the almoner and sub-almoner; and lastly, in a silver basin by the queen herself;—the person who washed, making each time a cross on the pauper's foot above the toes, and kissing it. This ceremony was performed by the queen, kneeling, being attended by thirty-nine ladies and gentlewomen: the queen's part of the business took place after singing and prayers, and the reading of the Gospel, which describes the fact thus imitated. Her Majesty then distributed clothes, victuals, and money; the rest of the proceedings being similar to those in the cases mentioned before.

It appears that the money given to the maundy people, in addition to the pennies, was meant for the redemption of the sovereign's garments, which, according to the ancient order, it was usual to give away. Queen Elizabeth redeemed her gown by giving twenty shillings in a leathern purse to each person.

The ceremony of the archbishop washing the feet of the apostles, is performed in great style at Moscow, n Russia, on the Thursday before Easter. The priests appear in their most gorgeous apparel. Twelve monks, designed to represent the twelve apostles, are placed in a semicircle before the archbishop. The ceremony takes place in the cathedral, which is crowded with spectators. The prelate, who performs all, and much more than is related of our Saviour in the 13th chapter of St. John's gospel, takes off his robes, girds up his loins with a towel, and proceeds to wash the feet of them all, until he comes to the monk who represents St. Peter, who rises up, and holds the same discourse with the archbishop which is recorded as having taken place between our Blessed Lord and that apostle.

Dr. Bright tells us that, in Austria, this singular ceremony is celebrated at Vienna, by the court. It is known in Germany, among the Romanists by the

epithet of the "washing of the feet." After suitable preparations are made, twelve men and twelve women are selected from the oldest and most deserving paupers. After attending mass, the emperor and empress, with the whole court, enter to the sound of solemn music, and approach the tables where the paupers are sitting, whom they serve with different courses of meats, and with wine. The tables are then removed, and silver bowls are placed beneath the feet of the men and women; the emperor washing the feet of the former, and the empress the feet of the latter, while the grand chamberlain, in a humble posture, pours water upon the feet of each one in succession from a golden urn. This rite concludes amidst the sounds of sacred music.

In Spain, one of the public sights of the town of Seville on Maundy Thursday, is a splendid cold dinner which the archbishop gives to twelve paupers, in commemoration of the apostles. The dinner is to be seen laid out on tables filling up two large rooms in the palace. Having partaken of a more homely dinner in the kitchen, these guests are furnished with large baskets to take away the splendid commons allotted to each in separate dishes, which they sell to the gourmands of the town. Each, besides, is allowed to dispose of his napkin, curiously made up into the figure of some bird or quadruped, which people buy as ornaments to their china cupboards, and as specimens of the perfection to which some of the poorer nuns have carried the art of plaiting.

At two o'clock in the afternoon, the archbishop, attended by his chapter, repairs to the cathedral, where he performs the ceremony of washing the feet of the twelve paupers in a large silver basin: they are seated on a platform erected before the high altar, and the prelate, stripped of his silk robes, and kneeling successively before each, goes through a pompous and ostentatious imitation of our blessed Lord's real humility.

In Rome, the Pope commemorates the washing of the disciples' feet by officiating in person. In this case, there are *thirteen*, instead of twelve, representatives of the apostles, the additional one representing the angel that once came to the table of twelve that St. Gregory was serving. The twelve are old priests, but he who represents the angel is very young. They are all dressed in loose white gowns, and white caps on their heads, and clean woollen stockings, and seat themselves in a row along the wall, under a canopy. When the Pope enters and takes his seat at the top of the room, the whole company kneel in their places and turn towards him; and on his hand being extended in benediction, they all rise and reseat themselves. The splendid garments of the Pope are then taken off; and, clad in a white linen robe which he wears under the others, and wearing the bishop's mitre instead of the tiara, he approaches these pilgrims, as they are called; then, taking from an attendant cardinal a silver bucket of water, he kneels before each of them successively, wets each foot, and touches it with a square fringed cloth; he then kisses the leg, and gives the cloth, together with a sort of white flower or feather, to the pilgrim. This ceremony is done so quickly, that it consumes scarcely two minutes. The Pope then returns to his throne, puts on his robes of white and silver again, and proceeds to the dining-hall; the thirteen priests are then seated in a row at the table, which is spread with a variety of dishes, and adorned with a profusion of flowers. The Pope gives the blessing; and walking along the side of the table opposite to them, hands each of them bread, plates, and cups of wine. They regularly rise up to receive what he presents; the Pope then goes through the forms of service, gives them his parting benediction, and leaves them to finish their dinner. They carry away what they cannot eat, and receive a small present in money besides.

The custom of the Maundy is supposed to have been of great antiquity, as it is first referred to Augustine, who lived about the year 400 A. D. It has been ordinarily confined to royalty, but in the Earl of Northumberland's *Household Book*, which belongs to the early part of the sixteenth century, we find mention made of "Al maner of thyngs yerly yeven by my lorde of his maundy, ande my laidis, ande his lordshippe's childeren."

SILK FROM SHELL-FISH.

We have lately noticed an attempt made to procure silk, adapted for the purposes of the manufacturer, from spiders' nests. We have now to speak of a similar, and rather more successful, attempt with respect to shell-fish.

It is well known that the common edible muscle has the power of affixing itself to rocks, or to the shells of other muscles, with great firmness; and it has been ascertained that if the animal is accidentally torn from its hold, it has the power of replacing the threads of viscous matter, by which it thus attaches itself to different objects. The threads issue from the part of the shell where it naturally opens, and though each in itself is too delicate to possess much strength, yet the almost infinite number which are put forth, acting as so many small cables, keep the fish steady in its position, amidst all the power of the waves.

It is not to the muscle, however, that we refer as a silk-producing animal, but to a fish belonging to the same order, and in many respects resembling it. This is the *pinna*, a much larger fish than the muscle, its shell being sometimes found two feet long. The shell is bivalve, fragile, and furnished with a beard; the valves hinge without a tooth. The pinna like the muscle attaches itself to rocks; it is also found with the sharp end of its shell embedded in mud or sand, while the rest of the shell is left free to open in the water. Like the muscle, it has the power of spinning a viscid matter from its body; but the threads of the pinna are of great delicacy and beauty, being scarcely inferior to the single filament of the silkworm. Both the pinna and the muscle are furnished with an organ, which is sometimes called a tongue, sometimes a foot, from its performing the offices of both those members. The latter of these offices is denied to it by some naturalists, who affirm that the pinna always remains in the same place; but though its powers of locomotion are very limited, yet it appears that an occasional change of situation is effected by means of the organ we have alluded to. The extremity of the foot (as we may then call it,) is fixed to some solid body, and being contracted in its length, the whole fish is necessarily drawn towards the spot where it has fixed itself; and by a repetition of these movements the animal arrives at its destination. The principal use of this organ, however, appears to be that of forming the *byssus*, which is the name given to the collection of threads by which the animal attaches itself at various points to some fixed spot. The formation of these threads is exceedingly curious and remarkable. They are not spun, like those of the spider and of the silkworm, by being drawn out of the body, but they are cast in a mould, where they remain until they have acquired a certain degree of hardness and consistency. This mould is contained in the tongue of the animal, and forms a deep longitudinal furrow extending from the root to the circumference, having its sides so constructed as to fold over it, thereby making it into a canal. On the outside, this canal appears like a crack, being almost covered by the flesh on either side, but internally it is wider, and surrounded with circular fibres. The tongue is furnished with glands for the secretion of the peculiar liquor which forms the byssus, and from these it is poured into the canal, where it dries into a solid thread. When it has acquired sufficient tenacity the animal protrudes its foot, and applies and fixes the end of the thread to the surface of some object in its vicinity: the whole length of the canal is then suddenly opened, and the thread,

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which is fixed by one end to the tendon at the base of the foot, and by the other to the solid surface in question, is disengaged from its mould. The canal is now ready to receive another portion of the viscid secretion, (which secretion exists in great abundance in this animal as well as in muscles,) and the process is gone through as before. Thread after thread is thus formed, and applied in different directions round the shell, and it has been observed that the animal puts each thread in succession to the test, by swinging itself round and stretching it.

Thus, as Reaumur has observed, the workmanship of the land and sea animals, in forming the same production, is very different. Spiders, caterpillars, &c., form threads of any required length, by making the viscous liquor of which the filament is formed pass through fine perforations in the organ appointed for spinning. But the pinna and muscle form their threads in a mould situated within the organ, and which determines the length of each filament. The work of the land animals therefore may be likened to that of the wire-drawer, while the labours of the sea-animals may be compared to those of the founder who casts metals in a mould.

It was at first supposed that the pinna, as well as the muscle, had the power of transferring the threads thus formed from one spot to another; but subsequent observation has proved that wherever the animal takes up its position, there it must remain, unless by any accident the threads become severed, when it immediately begins to form others, and every fibre employed in fixing itself in a fresh situation is newly formed at the time it is required. The old threads appear quite useless, and have, by way of experiment, been cut away from the body as close as was considered safe to the animal, when they were replaced by others, in as short a space of time as that employed by others not so mutilated. We learn from Poli, that the byssus in silk-producing fish is of the same structure as hair, and that at the extremity it is furnished with little cups, or suckers, by which it adheres firmly. In the pinna, the liquid matter is produced slowly, not more than four or five threads being formed in the course of a day and night. It is so exceedingly glutinous in its nature, that it will take a firm hold on the smoothest bodies. When the animal is disturbed in its operations, the threads are more hastily formed, and in consequence possess less strength than those which are produced at the ordinary rate.

The pinna is found on the coasts of Italy and Provence, and in the Indian Ocean. The largest and most remarkable species inhabits the Mediterranean Sea. It is exposed to the attacks of many enemies, especially of the cuttle-fish, which is its deadly foe. It is said, (and the alleged fact has been celebrated in poetry,) that the pinna is warned of approaching enemies by a faithful ally, which is ever at hand to afford its important services. This ally is a small animal of the crab kind, which takes refuge in the shell of the pinna, and compensates by its quickness of sight for the deficiency which the pinna, in common with the rest of its species, experiences in that respect. There is so much that appears fabulous in this reputed friendship of the pinna and the crab, that we willingly omit the several details, and proceed to notice the method employed to procure the byssus, and the uses to which that substance has been applied.

Although the fineness and beauty of this remarkable production is almost equal to that of the silkworm's thread, and has procured for the animal that forms it the common name of "the silkworm of the sea," yet, when attached in filaments of almost innumerable extent to the rocks below the surface of the sea, it requires considerable force to disengage the tuft of threads. At Toulon, an instrument called a *cramp* is employed by the fisherman for this purpose. This is an iron fork, with prongs eight feet in length, and six inches apart; the prongs are placed at right angles with the handle, the length of which is regulated by the depth of the water, and varies from fifteen to thirty feet. The pinnæ are seized, separated from the rock, and brought to the surface by means of this instrument.

It is uncertain whether the term byssus, as used by the ancients, is always applicable to this particular substance. Aristotle speaks of byssus as being made from the beard of the pinna, and it is certain that this kind of silk was employed in the manufacture of certain fabrics in very ancient times. But it is also said that by the name of byssus, the ancients meant indiscriminately any material that was spun, the quality of which was finer and more valuable than woollen threads. Sometimes the produce of the pinna is distinctly mentioned as being wrought into articles of dress; thus Procopius speaks of a robe composed of byssus of the pinna, as having been presented by the Roman emperor to the satraps of Armenia. This substance is evidently referred to by a writer of the year 1782, who says:—"The ancients had a manufacture of silk, and which about forty years ago was revived at Tarento and Regio in the kingdom of Naples. It consists of a strong brown silk, belonging to some sort of shell, of which they make caps, gloves, stockings, waistcoats, &c., warmer than the woollen stuffs, and brighter than common silk. I have seen such kind of shells myself; I think it was of the pecten kind, but cannot be sure."

On the shores where the larger kind of pinnæ abound, the manufacture above alluded to is still carried on. At Palermo the silk is wrought into various articles of dress of a beautiful description. The stockings manufactured from this material are so fine, that a pair of them can be easily enclosed in a snuff-box of the ordinary size, and yet their warmth is such, that they are said to be more useful in gouty and rheumatic cases, than appropriate for common wear. This material will probably remain a rarity, except in the countries where it is produced, for it cannot be obtained in sufficient abundance to render it a commodity for exportation. In England it merely forms a curious addition to some of our cabinets, while its existence as an article of manufacture is unknown.

To the objection that philosophy and the study of nature are proved by experience to lead to disbelief in revelation, the answer is easy. They are not friends to false views of religion; and this is the point of soreness. They are conversant with truths, and generate a discernment for truth: they detect falsehood, and are condemned because falsehood fears them. If ever they have led to so false a conclusion as religious disbelief, the reason is not that they have been pursued, but that they have not been pursued far enough. Partial studies may be injurious: they have led to doubt and error; but the real cause is then no other than that it has been under superficial inquiries into revelation; it is ignorance united to vanity. In each case alike the cure must be sought in more knowledge, as this is ever the remedy for the evils which follow from a little.—MACCULLOCH.

HABIT is the kindest friend or cruelest foe to human welfare. When it assumes the latter character, it comes ever in the most delusive and seductive forms. It soon substitutes its own irresistible will, for that of its victim; and triumphantly points to the gulf to which it bears him. The fly, caught in the spider's web, is a faint illustration of the power of habit. The fly knows, from the first moment, his destiny, and struggles to escape. The gambler, the drunkard, the felon, where and how do they learn that they have been caught in the web of habit?—S.

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THE SALMON-LEAP AT PEN Y GRAIG.

FRESH-WATER FISH.

I. The Salmon, (*Salmo salar.*)

In commencing our account of *Fresh-water Fish*, it may appear somewhat contradictory to place first on the list the common Salmon, an inhabitant alternately of fresh and salt water, who, as Isaac Walton quaintly observes, "like some persons of honour and riches, which have both their winter and summer residences, has the fresh rivers for summer, and the salt water for winter, to spend his life in." Nevertheless, we have the example of the worthy angler himself to sanction our calling him the "King of fresh-water Fish;" and, in truth, the salmon is a native of the streams and not of the sea.

The salmon family includes, besides the common salmon, a large proportion of the fresh-water fish of Europe, and of those peculiar to the lakes and rivers of other countries. The members of this family delight in clear water and in rapid currents; therefore, in fishing for them, the angler is generally led to healthful and luxuriant scenery where Nature displays all her freshness and beauty. Many of the other tenants of fresh water are found in ponds, pools, or stilly parts of the stream, and the pleasure of fishing in such situations is much less, as is also the value of the expected prize.

The form of the common salmon (*Salmo salar*) is elegant, and well adapted for swift motion through the water. The body is scaly, of a lengthened oblong shape; the head small and smooth; the first dorsal fin is nearly in the centre of the back, and the ventral fin immediately under it; in like manner, the second dorsal and anal fins correspond with each other; while the pectoral fin is small, pointed, and placed very low down towards the throat. The teeth are very numerous.

When very young, this fish is called the "smelt," or "smoult," the meaning of which is "little one;" as it advances in size, it acquires the name of "grilse," or "gilse;" and it is not till it is full grown, and has gained its proper flavour and colour, that it is called salmon. When first the salmon comes from the sea, it has a fine metallic lustre, sufficient to show that it is a migratory fish, for it is only those which visit the salt waters that display this peculiar appearance. The head and back at this time are bluish black, passing through lighter shades to silvery white at the belly. There are also certain dusky spots on the upper part of the fish, which, together with much of the metallic lustre, disappear on its remaining long in the river.

The time of the salmon leaving the sea, and ascending the rivers, is so extremely variable, both with respect to different rivers, and also with respect to different fish in the same rivers, that we can only speak in a general manner on this subject. The young fish, and a few of the old ones, usually appear in the mouths of rivers at a very early season, even before all those of the former year have descended; but the fishing at this time is injudicious, because the descending fish are apt to be taken

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with the others, and not having recruited their strength in the salt water, these are unwholesome as well as insipid. During the summer months, large and excellent salmon make their appearance in the estuaries, and after lingering for some time in the brackish water, ascend in succession to the higher parts of the stream. The cause of their remaining some time in water that is brackish, or partially salt, is probably to fit them for the change they will experience in becoming inhabitants of fresh water. It is extremely doubtful whether the fish could bear a sudden removal from salt to fresh water, or from fresh to salt, for it has been remarked that they do not ascend the smaller streams which enter the sea abruptly and have but little brackish water at their union. When they meet with no interruptions in their course, they ascend to a great distance, even 400 or 500 miles, though the further they run the worse they are esteemed for the purposes of the fisherman. Their industry and perseverance in overcoming such obstacles as may interfere to prevent their progress upwards are truly remarkable: by a sudden and powerful spring, they will often clear rapids or weirs of eight or ten feet in height. To perform this leap they appear to bend their tail into a curve to as great an extent as possible, and then strike the surface of the water with it, with violence, springing forward at the same instant. It is affirmed by the older naturalists, that in making the spring, the fish curves its body and puts its tail into its mouth, and this opinion is still entertained by many persons. In some situations where the fishes find the leap impracticable, they assemble in great numbers and wait till the swelling of the river shall have enabled them to accomplish their purpose; but where the fall is wholly insurmountable, the fish, after many fruitless attempts to clear it, at last commence spawning in the pool beneath. Rivers of this description are often productive of very excellent fish, for the progress of the salmon being checked, they return the sooner to the sea, in which situation they regain both size and flesh.

The leaping of salmon is mentioned by Michael Drayton in his work entitled *Polyolbion*, in which he describes the rivers, mountains, forests, castles, &c., of this country. The river Teivy or Tivy of which he speaks, is in Pembrokeshire, and is described by Camden in his *Britannia*, as having at its junction with the sea a fall that is "so downright, and so high, that the people stand and wonder at the strength and sleight by which they see the salmon use to get out of the sea into the said river; and the manner and height of the place is so notable, that it is known far by the name of the 'salmon leap.'"

> As when the Salmon seeks a fresher stream to find
> (Which hither from the sea comes, yearly, by his kind),
> As he towards season grows; and stems the watery track
> Where Tivy, falling down, makes a high cataract,
> Forced by the rising rocks that there her course oppose,
> As though within her bounds they meant her to enclose;
> Here when the labouring fish does at the foot arrive,
> And finds that by his strength he does but vainly strive;
> His tail takes in his mouth, and bending like a bow
> That's to full compass drawn, aloft himself doth throw;
> Then springing at his height, as doth a little wand
> That bended end to end, and started from man's hand,
> Far off itself doth cast; so does the salmon vault;
> And if, at first, he fail, his second summersault
> He instantly essays, and from his nimble ring
> Still yerking, never leaves until himself he fling
> Above the opposing stream.

Our frontispiece represents the salmon-leap above described. The depth of the fall at this place is not more than six or eight feet, but the accompanying scenery is picturesque and beautiful. The base of the rocky hill, Pen y Graig, round which the river sweeps, as well as the opposite bank, is richly wooded, and near the fall part of a mill appears obscurely through the foliage. At the foot of the cascade is a pool in which the salmon rest when foiled in their attempt to ascend the stream; the privilege of fishing in the pool is obtained by the payment of an annual sum to the proprietors.

Another celebrated salmon-leap is at Ballyshannon in Ireland, and we are assured by those who have been eye-witnesses of the fact, that the leap taken by the salmon at this spot is at least fourteen feet in height, and including the curvature they make in performing it, must amount at least to twenty feet. Twiss tells us that he watched this interesting performance for hours, and observed that the fish sometimes bound almost to the summit, but the falling water dashes them down again; at other times they dart headforemost and sidelong on a rock, remain stunned for a few moments, and then struggle into the water again; when they are so lucky as to reach the top they swim out of sight in a moment. They seemed to bound, not from the surface of the water, but from some unknown depth beneath it. During these flights, (as they may be termed,) they have often been shot, or caught with strong barbed hooks fixed to a pole; and instances have been known of women catching them in their aprons. It is related of the salmon-leap at Kilmorach, Inverness, that Lord Lovat, knowing that of the great number of fish which endeavoured to spring over the fall, many often missed their aim, and fell upon the bank, placed a large pot on a fire made on the rocks close by, into which they occasionally dropped in their unsuccessful attempts, and thus enabled him to boast, that in his country provisions abounded so much, that if a fire were made and a pot set on to boil near the margin of a river, the salmon would of themselves leap into it, and thus save the trouble of fishing for them. This joke, however, involves too much unnecessary cruelty to win our admiration.

The salmon resort, for the purpose of spawning, to such situations as are best calculated for the preservation of the young fry. Cold, northerly regions are preferred by this fish, for there, though the arrival of warm weather is long deferred, the temperature is less variable than in more southerly situations. The alternate heat and cold of a long spring is very destructive to young and tender animals, and this is one of the causes why we find the northern rivers of Great Britain to be much more abundant in salmon than the southern.

The spawning of the salmon takes place at different periods throughout the autumn, but though the time varies, the mode of procedure is always the same. A shallow part of the stream is selected by the pair, and both male and female exert themselves in the preparation of a furrow, for the deposition of the spawn. They excavate this furrow by working in the sandy or gravelly soil with their snouts, taking care to keep their heads opposed to the direction of the stream, for they cannot "hang" or remain stationary in the water under any other circumstances. In descending rivers they can keep pace with the flow of the stream, or outrun it, and thus they experience no inconvenience, but if they were to linger, the water would get under the gill-lids, and choke them. The male fish, previous to the breeding season, becomes furnished with a hard and horny process on the lower jaw, and this is of service in the preparation of the spawning-furrow. While this gristly substance remains, the fish is said to be *kipper*, and unseasonable, but on the return of the salmon to the sea, this substance, according to Walton, gradually wears away, or is cast off; and he recovers his strength, and comes next summer, if possible, to the same river again. Sir Humphry Davy describes the kipper salmon as being so different in appearance from the salmon fresh from the sea, as scarcely to be recognised as belonging to the same species. He caught two fish in the river Tweed, one in the spent state, the other newly arrived from the salt water, and though they were both of the same length, one weighed only four pounds, the other nine pounds and a half. The spent or kipper salmon was

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very lean, showing an immense head, spotted all over with black and brown spots, and the belly almost black; the other bright and silvery, without spots, and the head small. Their flesh was compared at table, and while that of the one was white, flabby, and bad, without curd, that of the other was of the brightest pink, and full of dense curd.

The process of depositing the spawn occupies eight or twelve days, and the ova is then carefully covered with gravel and stones. The fish then leave their numerous eggs or spawn, (estimated at from 17,000 to 20,000,) and retire to some neighbouring part of the stream, where the water is deeper, and more refreshing to them. In a fortnight or three weeks after this, the male fish sets out on his return to the sea, leaving the female behind to watch the spawning ground, which she continues to do till towards the time of the ova being hatched. The females are the first to leave the sea, and the last to return to it. For some time both before and after the spawning season, salmon are unfit for food; and thus being less sought for, the continuation of the species is insured.

The period during which salmon are out of season is indicated by a difference in their appearance, the males being at that time a reddish-brown on the back, and the females of a dusky gray. The fish descend to the sea by short stages, and with much less vigour and animation than they display at the time of ascending. The coldness of the weather at the time of their return, induces them to keep in the middle of the stream, at a considerable depth, which, owing to the water being warmer than the air, is the situation best suited to their feelings. In their ascent they are frequently seen in the shallows, or near the surface, from the very same sensibility to the weather which makes them, in winter, choose the opposite situation. Thus they reach the estuaries, and there lingering again in the brackish water, and finding an abundant supply of food, they quickly regain their size and strength, and proceed to their unknown abode in the recesses of the ocean. We must now return to the young fry in the spawning-bed, and state their progress from the time of their leaving the egg to that of their joining the rest of their race in the vicinity of the ocean.

At whatever period of the autumn the spawn may have been deposited, the time of its being hatched is always the same in the same river. Thus, supposing one pair of salmon to have arrived long before the rest, and that many weeks occur between the spawning of the female, and that of the others frequenting the same stream, yet on the arrival of the more genial season, the eggs last deposited are hatched at the same time with the first: hence, it is impossible to specify the exact time which intervenes between the spawning season, and the vivification of the eggs, the influence of the season being the sole cause of the latter circumstance. According to the state of the weather, therefore, the young fry come forth at an earlier or later period. The months of March and April are the usual period of their appearance, and they leave the ova in succession, for the manner in which the spawn is deposited prevents the under part of the mass from experiencing the effects of the warmer weather, until those at the upper part have burst the eggs. The young salmon remain for a few days in the sand and gravel, the egg still adhering to them, and affording them nourishment, but they soon begin to force their way upwards, and appear through the sand, shooting up like young plants. They are now about half an inch in length, and remain for some time in the shallow parts of the stream. Their earliest food is not very well known, but the abundance of small living creatures with which the waters begin to be filled at that season of the year, must prevent any chance of want in this respect. They grow very rapidly, and in the course of a week or ten days, they have more than doubled their former size. As their strength increases, they resort to the deeper parts of the stream, and move towards the sea. Spring floods frequently carry them rapidly onwards, and by the month of June, the rivers are pretty well cleared of *smelt*, as the young fish are called. On their arrival at the sea, or rather at the brackish water, (for during the first season they seldom leave the estuaries and offings,) their growth is exceedingly rapid. Isaac Walton says, "the age of a salmon exceeds not ten years; and let me next tell you that his growth is very sudden; it is said that after he is got into the sea, he becomes from a samlet, not so big as a gudgeon, to be a salmon, in so short a time as a gosling becomes a goose." This, our author informs us, has been ascertained by tying a riband, or tape, in the tail of some young salmons which had been taken in weirs as they were swimming towards the salt water; and then by taking part of them again, having this known mark, at their return from the sea some months after.

The young salmon are the first to ascend the rivers; and towards autumn they are frequently found of the weight of six pounds. These are termed grilse, while those under two pounds weight are called "salmon-peal." They breed during the first season, and are said generally to ascend the same rivers in which they were spawned.

Salmon are supposed to go farther out to sea as they get older, but they cannot seek their food, as many sea-fishes do, in the depths of the ocean. They are formed for straightforward motion, and not for ascent or descent. The situation of the fins, and the upward direction of the eyes, in what are called "bottom fishes," are peculiarly fitted for the purpose of plunging to, and ascending from, the bottom of the ocean, but in the salmon the lateral direction of the eyes, and the arrangement of the fins, is equally fitted for uniform progression.

In a future article we shall mention the most celebrated salmon rivers, the different methods employed in taking the fish, and various other particulars relative to this interesting subject.

HOPE.

What is hope? The beauteous sun,
Which colours all it shines upon
The beacon of life's dreary sea,
The star of immortality!
Fountain of feeling, young and warm;
A day-beam bursting through the storm;
A tone of melody, whose birth
Is, oh! too sweet, too pure, for earth:
A blossom of that radiant tree,
Whose fruit the angels only see!
A beauty and a charm, whose power
Is seen—enjoyed—confessed each hour!
A portion of that world to come,
When earth and ocean meet the last o'erwhelming doom.

To those who perform the duty of the day agreeably to its institution, Sunday is a day of cheerfulness, a festival; it is rest to the poor, relaxation to the rich, comfort to the afflicted, and admonition to the prosperous. If successful in our calling, our duty is thanksgiving; if distressed, prayer; if wealthy, gratitude; if poor, resignation. An opportunity for all these duties is afforded in public worship, and public worship is best suited to the weakness of our nature: for all stand in need either of example to aid their fervency, or exhortation to advance their progress, or mutual conformity to promote their devotion. After attendance upon the public service, I know of no rigid or gloomy observances which do not partake more of ceremony than of true religion. Calmness and tranquillity are the happiest produce of devotion; rest without indolence, recreation without dissoluteness, and conversation without cant, make the day a day of blessing to all who feel that a quiet mind, and serious conduct, afford more pleasure than the vicious ever experience in the indulgence of licentiousness or tumultuous joys.—Dr. Vincent.

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BEJAPOOR, IN HINDOSTAN.

BEJAPOOR is the name of a large province in India, of one of the divisions of that province, and also of its principal city. The province of Bejapoor is situated in the south-western part of Hindostan, and is about 320 miles long and 200 broad: it is, however, to the *city* of Bejapoor that we propose to direct our attention in this paper.

The city of Bejapoor was formerly of great note. When the Emperor Aurungzebe captured it, in 1689, the fortifications, according to the description transmitted to us, appear to have been of immense extent; for between the wall of the fort and the outer wall of the old city there was said to have been room for 15,000 cavalry to encamp. Within the citadel or inner fort were the king's palace, the houses of the nobility, and large magazines, besides extensive gardens, and round the whole a deep ditch, always filled with water. "It is still asserted by the natives," says Mr. Hamilton, "with their usual proneness to exaggeration, that Bejapoor, while flourishing, contained 984,000 inhabited houses, and 1600 mosques."

Bejapoor now has the appearance of a record of other days, for by intestine commotions and revolutions, it is now little else than a heap of ruins, studded with splendid but unoccupied buildings. From a distance even of fourteen miles, numerous domes, spires, cupolas, and minarets present themselves to the eye; but a nearer approach dispels the illusion which they are calculated to raise, for it is very little better than a vast expanse of ruins.

About five miles from the city is a village called Toorvee, where are to be seen the remains of a royal palace, a mosque, and other buildings. To the east of this stands a Mohammedan mosque, still the resort of devotees; and near it are the remains of an elegant mausoleum and mosque, belonging to the minister of one of the bygone sovereigns of Bejapoor. Numerous other mausolea and mosques are met with from hence to the present city, among which the most celebrated are the mausoleum and mosque of Ibrahim Adil Shah: these were built about the year 1620, and are said to have cost 700,000*l.*, and to have occupied 6533 workmen for thirty-six years. They are built upon a basement one hundred and thirty yards in length, and fifty-two in breadth, and raised fifteen feet. The mausoleum is a room fifty-seven feet square, enclosed by two verandahs, thirteen feet broad, and twenty-two feet high. The central chamber of the latter is quite plain, as is also the interior of the mosque, but in other respects these buildings excel in elaborate architectural elegance. The fretwork of the ceilings of the verandahs, their panels covered with passages of the Koran, in bas-relief, and stone trellices, pierced with a meshwork of Arabic characters, are all in the highest style of Oriental sculpture.

Bejapoor itself may be considered as two cities adjoining each other, that which is called the *fort* lying to the east, and the *old city* to the west. The old city contained the buildings which we have just described. The fort was surrounded by a wall, eight miles in circumference, and though decayed in many parts, there is not yet a complete breach through any part of it. Guns were mounted on it, and sentinels placed at the gates, so late as 1819. There are seven gates, one of which is now shut up, and the others are open, viz., the Mecca, Shahpoor, Bhaminy, Padshapoor, Allahpoor, and Futteh gates. There were formerly a ditch, a covered way, and a glacis, on the eastern face, but scarcely any vestiges of them are now to be seen.

On coming within the fort, (or present existing city,) of Bejapoor, a scene of mingled splendour and ruin presents itself. There is still one entire and very regular street, three miles in length, and fifty feet wide, paved throughout, and containing many stone buildings, both private dwellings and mosques. Another street, nearly equal in length to this, also exists, but its buildings are rather in a ruinous state. The most remarkable edifices still remaining are the tombs of Abdul Reza and Shah Newauz, the Jumma Musjeed, or great mosque, the mausoleum of Sultan Mahmood Shah, the bowlee of the Nao Bagh, besides innumerable mosques and mausolea. There is also a low Hindoo temple, supported by numerous pillars of

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single stones, in the earliest and rudest style of Brahminical architecture, supposed to have been the work of the Pandoos; and this is almost the only Hindoo structure extant in or about Bejapoor; for the country, though in the heart of Hindostan, long belonged to the Mahrattas, who were Mohammedans.

The inhabited part of the fort is chiefly in the vicinity of the great mosque. There are also groups of houses scattered over its immense area, while mud hovels are interspersed among its splendid ruins. There are some enclosed and cultivated fields; but generally speaking, the neighbouring district is a ruinous wilderness, interspersed with trees and shrubs. There is a well frequented bazaar, neatly built of stone, without the western gate: this forms nearly the only part of what is called the old city that is still inhabited. On the southern side of the fort there are no traces of any ancient buildings, or of the city walls, the walls of the fort being the ultimate boundary of Bejapoor in that direction. Most of the large edifices, (the palaces in the citadel excepted,) appear to have little or no wood used in their construction, the prevailing character of their architecture being massive solidity, rather than elaborate workmanship or elegant design.

The cause of the ruinous state in which this once magnificent city now exists is to be found in the repeated contests for sovereignty which have taken place in that part of Hindostan. The district or country which contains Bejapoor was under the dominion of Hindoo sovereigns until 1579, when the Mohammedan princes of Southern India captured it. They retained it until 1689, when the Emperor Aurungzebe conquered it. After this the powerful tribe or nation of the Mahrattas got possession of the country, and retained it almost without intermission until modern times. But by about the year 1804, the province of Bejapoor exhibited an extraordinary scene of anarchy. Although the country was nominally under the chief of the Mahrattas, his authority scarcely extended beyond the city of Poonah, and was resisted by every petty head of a village: the different chiefs and leaders of banditti by whom the country was occupied were almost innumerable. At length, in 1818, Bejapoor was finally conquered by the British, and it is now probable that it will, under British protection, gradually improve in many respects.

Mr. Hamilton (to whose work we have been chiefly indebted for these details) says:—

There are some enormous guns still remaining here, corresponding with the Cyclopean magnitude of the fort. Formerly there were twelve, but in 1820 only the great brass gun, (cast in 1549,) and the long iron one remained. For the calibre of the first, an iron bullet, weighing 2646 pounds, would be required. In 1823 the Bombay government was extremely desirous of sending it to England, as a present to the king, but until the roads are improved, it would be almost impossible to transport such a ponderous mass to the sea-coast.

GREAT GUN AT BEJAPOOR.

Truth is the most powerful thing in the world, since even fiction itself must be governed by it, and can only please by its resemblance.—Millingen.

SHOE-BUCKLES.

If we were to inquire into the influence of fashion and taste in manufactures, it would be found that the link which connects them is very close, and that the well-being of the working classes is singularly dependent thereon. Persons who view these matters only on the surface, are apt to imagine that changes of fashion are no further important than as means of gratifying the eye; but, so far from this being the case, every change of fashion brings some kind of mechanical labour or skill into exertion, and throws out others.

A singular example of this is shown in the rise, progress, and decline of that apparently very simple article of dress, the *shoe-buckle*, a decoration which, however much out of use at the present day, was indispensable to the appearance of a gentleman two or three generations ago.

The buckle was preceded, and has been superseded, by other forms of shoe-fastening. "Perhaps the shoe, in one form or other," says Mr. Hutton, of Birmingham, "is nearly as ancient as the foot. It originally appeared under the name of 'sandal'; this was no other than a sole without an upper leather. That fashion has since been inverted, and we now, sometimes, see an upper leather nearly without a sole. But, whatever was the cut of the shoe, it always demanded a fastening." Under the house of Plantagenet, the shoe shot forward horizontally from the foot to an enormous length, so as to require the extremity to be fastened to the knee, sometimes with a silver chain, at other times with a silk lace, and even with a piece of common packthread. This enormous beak to the shoe became the subject of legislative enactment; for we find that, in 1465, an order of council was issued, prohibiting the wearing of shoes whose beaks projected more than two inches in front of the foot, on pain of a fine to the king, and even of excommunication.

When this fashion changed, the rose shoe-toe sprang up, in compliment to the houses of Lancaster and Tudor. This rose in its turn gave way to shoe laces and strings, which were often made of silk, tagged and fringed with silver. At length, in the reign of William and Mary, the shoe-buckle made its appearance; or as Mr. Hutton quaintly expresses it, "the Revolution was remarkable for the introduction of William, of liberty, and the minute buckle." This mode of fastening the shoe became very generally adopted, in foreign countries as well as our own; and the town of Birmingham became celebrated for the large number as well as the excellence of the buckles made there.

Seventy years ago, the kind of buckle most in demand was made of Pinchbeck—an alloy of copper and brass, so called from the name of the person who so employed it. Another variety was the plated buckle: this was cast in pinchbeck, with the pattern on its surface, and a silver coating was laid on by means of a flux of turpentine and resin; and the surface was finally chased or stamped. A third and more valuable quality was the "close-plated" buckle. A form of buckle extensively made for foreign sale, was produced from a compound metal known among the workmen as Tutannia, and cast in moulds. It is said that in Germany, this article was manufactured in the open streets, so that a passenger might choose his pattern, see the process of making, and march off equipped with shoe-buckles, in the course of five or ten minutes. Each form of buckle had at that time some fanciful name, by which it was known in the trade; such as "Bull's eye," the "Marquis of Granby," the "Whim-wham," "Job's fancy," the "Crow's foot," and others.

About the year 1778, an impulse was given to the buckle trade at Birmingham, Walsall, and Wolverhampton, by the invention of plating upon tin or composition foundations. The buckles were cast singly by hand, in tin or copper moulds, the silver being first pressed into the mould, and the composition then poured over it.

The intimate union of the metals was aided by the use of corrosive sublimate. Different metals were employed, such as copper, steel, spelter, and others, to give hardness to the tin. This plan gave birth to many elegant devices in the shoe-buckle, as the union of the silver with the metal beneath was so complete as to admit of a varied range of patterns and arrangement of ornaments; particularly that of inlaying yellow chased ornaments on the surface of the silver.

A peculiar arrangement of the *chape*, a part of the buckle which fastened the shoe, enabled the manufacturer to give almost any size to the buckle, and to adopt a variety of shapes, such as round, octagonal, oval, oblong, &c. The competition among the makers now became very active; and a consequence resulted which too frequently deteriorates the credit of those employed: the materials and mode of workmanship became worse in quality, in order that the selling price might be low. It is said, that for many years the consumption of buckles in the metropolis was so enormous, that half the luggage of the coaches going from Birmingham to London was supposed to consist of buckles.

Soon after this period, a further change took place in the mode of manufacture, by making the shell or foundation of one metal, placing a layer of tin on that, and plating the exterior surface with silver. Another kind was the silvered buckle, in which the exterior layer of silver was excessively thin. The buckle being cast in some cheap metal, fine silver was dissolved in aqua-fortis, and precipitated in a powder; a few chemical ingredients were added, and the whole brought into a liquid state, and spread over the buckle with a brush. The buckle was then placed on a gentle fire till the ingredients were fused, and after a few other processes, the buckle acquired a silvery whiteness. This silvery surface would bear burnishing, and had a good appearance; but it was soon rubbed off by wear. So large was the demand for buckles coated with silver, that one Birmingham maker produced for one foreign house four thousand pounds worth in the space of six months.

Mr. Luckcock of Birmingham, who wrote on this subject, says that many a princely fortune was acquired during the efforts and fluctuations in the buckle-trade, and not a few as profusely squandered. No anticipation was contemplated, of any falling off in the demand. But the time was approaching when the buckle was to be superseded by another form of shoe-tie. "About the year 1790, the foe commenced an insidious attack; and however insignificant the agent might at first appear, the *shoe-string* was destined to accomplish the mighty revolution. For a long time the advances were inconsiderable, and hope was sanguine that the whim would be but of short continuance. Every manufacturer gradually felt the ground falling from beneath his feet, but still supposed that his competitors were doing better than himself; till confidence itself at length gave way to the general panic, and, if one may so express it, those were best off at last who got out first." The manufacturers, as generally happens in such cases, thought themselves aggrieved; but by whom was not an easy question to answer. They first tried ridicule, in a way which, it must be confessed, was sufficiently weak and foolish; viz., to parade an ass through the streets of Birmingham, with shoe-bows attached to his fetlocks. A more rational course adopted, was to send a deputation of master manufacturers up to London, to wait on the Prince of Wales (afterwards George the Fourth; at Carlton House, and solicit the aid of his countenance and support. The Prince received the deputation courteously, and promised to do all which his personal influence could effect, to discourage the use of the shoe-tie. But all to no effect; taste, fashion, opinion, call it what we will, had taken such a decided turn, that from that time (1791) the use of the shoe-buckle declined every year more and more.

Mr. Luckcock, who had himself been in the buckle trade, estimated the number of persons engaged therein in and about Birmingham, at upwards of four thousand, when the manufacture was in the zenith of its prosperity; and he made the following calculations to show the importance of this trade. Suppose the weekly earnings of these persons, young and old, to have averaged ten shillings each:—

This would produce	£2000
Materials, say	2000
Profit of manufacturer, retailer, &c. . .	2000
	6000
Weeks in the year . .	52
	£312,000

And supposing the buckles to sell, on the average, at 2*s.* 6*d.* per pair, (this may now-a-days seem a high average; but a guinea or upwards was not an unusual price for gentlemen's buckles at the period of which we are speaking,) this would show 2,496,000 pairs as the quantity annually made. Taking the population of Great Britain at that time to be twelve millions, and suppose half of them to wear buckles, this would allow each wearer a new pair every three years, and about half a million of pairs for exportation, which is deemed no improbable supposition. On this calculation, every workman would make 625 pairs during the year, about two pairs per day, excluding Sundays. These calculations are of course only approximative; but they furnish curious evidence of the fluctuations to which manufactures are liable, and they are valuable as showing how necessary provident habits are to the workman, since he can never tell how soon a change may occur which will compel him to turn his talents into some new department of labour.

We will conclude by quoting a remark from Mr. Luckcock, who wrote in 1824:—"Of all the mutations and revolutions which this town has experienced within the last fifty years, none appear to be so remarkable or extraordinary as those connected with its ancient and apparently invaluable shoe-buckle trade. To those of the inhabitants who remember its vast extent and importance, it seems almost to mock at recollection; and as to the present generation, if the fact was not authenticated while some few of the surviving witnesses remain, it must soon have appeared incredible, that at one period there were not fewer than four thousand persons employed in the town and neighbourhood in this article, at that time so much admired, though now neglected and almost unknown. The universality of the demand seemed to bid defiance to the future caprice of fashion; and our daily bread appeared quite as likely to fail in its supply, as that orders should totally cease for this elegant and imagined necessary ornament."

WIRE-DRAWING.

I. HISTORICAL NOTICE.

AMONG the various modes by which metallic substances are brought into a form fitted for manufacturing purposes, few are more remarkable than the process of *wire-drawing*, whereby the metal is made to assume an equable, smooth, and cylindrical form, and a diameter varying through extensive limits. It seems highly probable, that in early periods metals were beaten with a hammer into thin plates or leaves, which were afterwards divided into narrow slips by means of some instrument resembling scissors; and that these slips were by a hammer and file rounded so as to form threads or wire.

All the ancient writings, so far as they relate to this subject, seem to support this opinion. In describing the holy garments of Aaron (Exodus xxxix. 3,) the inspired historian uses these words:—"And they did beat the gold into thin plates, and cut it into wires to work it in

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the blue, and in the purple, and in the scarlet, and in the fine linen, with cunning work."

The profane writers speak similarly of slips, cut and beaten, as forming wires. Homer makes Vulcan repair to his forge, and form on his anvil, by means of hammers and files, a net as delicate as a spider's web. Beckmann supposes that the first employment of metals, in a form at all analogous to this, was by sewing slips of gold upon the clothes, and particularly on the seams; but that people afterwards began to weave or knit dresses entirely of gold threads, without the addition of any other material. Of such a kind are supposed to have been the mantle taken from the statue of Jupiter by Dionysius, as mentioned by Cicero and Valerius Maximus; and also the tunic of Heliogabalus, described by Lampridius. This appears to have been *drap d'or* in the proper sense of the term, for the more modern tissue known by that name was a species of cloth, the threads of which were of silk, wound round with gilt silver wire.

Pliny ascribes the weaving of such gold threads into cloth, as the invention of King Attalus; but later writers trace it to an earlier date, and it is supposed that Attalus merely applied gold threads to the surface of cloth in the manner of embroidery. The employment of silver for a similar purpose seems to be of much later date. Vopiscus states that the Emperor Aurelian was desirous of abolishing the use of gold for gilding and weaving, because, though there was more gold than silver, the former had become scarce by its frequent use for these purposes. Saumaise has proved that silver threads were interwoven in cloth in the time of the last Greek emperors; but it is not known how long this custom had then existed.

At what time the mode of making threads or wires of metal assumed a form analogous to that at present adopted, has been matter of dispute. It is extremely probable that the first experiments in wire-drawing were made upon the most ductile metals; and that the drawing of brass and iron to the form of wire is of later date. As long as the work was performed by the hammer, the artists at Nürnberg were called "wire-smiths;" but after the invention of the modern process, they were called "wire-drawers" and "wire-millers." As both these appellations occur in the histories of Augsburg and Nürnberg about the middle of the fourteenth century, it is deemed probable that the invention of wire-drawing may be placed in the early part of that century.

When gold lace,—that is, silk thread enveloped in a golden covering,—was first brought into use, it appears that the gold wire, used as the envelop, was round, or cylindrical, and that the flattening was introduced from motives of economy, since flat wire will go three times as far as cylindrical wire, when used merely as a covering. Of the wire-work of the ancients, few remains are known. In the museum at Portici, which contains a variety of articles discovered at Herculaneum, are three metallic heads, with locks in imitation of hair: one of them has fifty locks made of wire as thick as a quill, bent into the form of a curl; and on the other the locks are flat, like small slips of paper which have been rolled together with the fingers, and afterwards entangled. A figure of Venus has on the arms and legs golden bracelets, formed of wire. Among the insignia of the German empire is the sword of Saint Maurice, the handle of which is wood, bound round with strong silver wire. Such are a few instances of ancient workmanship at present remaining.

The present mode of making wire, as we shall hereafter explain, is by drawing small slips of wire through circular holes in a hardened steel plate; and it is supposed that this method was first constructed, if not invented, by Rudolph, a native of Nürnberg, in the fourteenth century. Conrad Celtes states that the son of the inventor, cajoled by avaricious people, discovered to them the whole secret of the machinery; which so incensed the father that he would have put the incautious son to death, had he not precipitately escaped. Whether or not this was really the mode of promulgation, it appears certain that the art of wire-drawing soon attained a high degree of excellence at Nürnberg. Several improvements were from time to time made by different persons, who received exclusive patents for using them, sometimes from the emperor, and sometimes from the council, and which gave rise to many tedious lawsuits.

Dr. Hirsching has collected many curious details respecting the early progress of this art. In the year 1570, a Frenchman, named Anthony Fournier, first brought to Nürnberg the art of drawing wire exceedingly fine, and made considerable improvements in the apparatus employed for that purpose. In 1592, Frederick Hagelsheimer, a citizen of Nürnberg, began to prepare fine gold and silver wire, such as could be used for spinning round silk and for weaving, and which before that period had been manufactured only in Italy and France. He received from the Nürnberg magistrates an exclusive patent, by the terms of which no other person was allowed to make or imitate the fine works which he manufactured, for the term of fifteen years; and this term was afterwards further extended for a similar period, on the ground of the large capital expended in the manufactory. He afterwards obtained a patent for the production of copper wire coated with gold or silver; and he seems to have received high marks of favour from the Emperor Rodolphus the Second, and the Emperor Matthias. When the patents finally expired, in 1621, the family of Hagelsheimer entered into an agreement, in regard to wages and other regulations, with the master wire-drawers and piece-workers of Nürnberg.

Augsburg was also celebrated for the production of wire, the finer sorts of which were made by men invited from Italy, particularly Gabriel and Vincent Marteningi. In France, iron wire is called *fil d'Archal*, and the artists there have an idea that this appellation took its rise from one Richard Archal, who either invented or first established the art of drawing iron wire in that country. The expression *fil de Richard* is also used among the French wire-drawers. Menage, however, thinks that *fil d'Archal* is compounded of the Latin words *filum* and *aurichalcum*.

But little is known respecting the introduction of wire-drawing into England. It has however been stated that all the English wire was manufactured with the hammer, until certain foreigners introduced the improved method, in the reign of Queen Elizabeth. Christopher Schultz, a native of Annaberg, in Saxony, came to this country under the permission given by that sovereign to strangers, to dig for metallic ores; and it is to him that the introduction of iron wire-drawing is attributed in the year 1565. In a book published by John Houghton, however, in 1727, it is intimated that the art was brought to England at a later period; and that the first wire-drawing establishment was opened at Esher, in Surrey, by two foreigners, named Jacob Momma and Daniel Demetrius. Before the period here indicated, the English iron wire is said to have had so little reputation, that the greater part of what was used in the kingdom, as well as the instruments employed by the wool-combers, were brought from other countries. By the time of Charles the First, however, the manufacture had risen to some importance; and we meet with a proclamation by that monarch, in 1630, to the following effect:—

That iron-wire is a manufacture long practised in the realm, whereby many thousands of our subjects have long been employed; and that English wire is made of the toughest and best Orsmund iron, a native commodity of this kingdom, and is much better than what comes from foreign parts, especially for making wool-cards, without which no good cloths can be made. And whereas complaints have been made by the wire-drawers of this kingdom, that by reason of the great quantities of foreign iron wire lately imported,

our said subjects cannot be set at work; therefore we prohibit the importation of foreign iron wire, and wool-cards made thereof, as also hooks and eyes, and other manufactures made of foreign wire. Neither shall any translate and trim up any old wool-cards, nor sell the same at home or abroad.

It may appear to a modern reader, that the mention of "hooks and eyes" in the above proclamation was a very trivial affair; but such was not the case, for these small articles were used in such quantities at the time in question, as to render the consumption of wire in their manufacture very large.

In the seventeenth century the occupation of wire-drawing became firmly established in the neighbourhood of Barnsley in Yorkshire; partly on account of the proximity of the woollen manufacture (the cards for which are made of wire), and partly on account of the presence of coal and iron-stone in the neighhourhood. Since that period, great improvements have taken place, and the manufacture is now established in different parts of the North of England.

Having thus briefly traced the history of the art of wire-drawing, we shall in a second paper describe the processes by which various kinds of wire are produced.

HOT CROSS-BUNS.

THE popular cry of Hot Cross-Buns on Good Friday, is so familiar to all who have lived in a town, whether large or small, that the reader might incline to wonder, upon the first view of the case, why so apparently trifling a subject should be brought before his notice; but it is our duty to suggest two considerations on this head; first, that ages upon ages have rolled away, and cross-buns have been regularly made at the Paschal season of the year; and that which is ancient in its origin, will naturally, if only on account of its antiquity, attract our curiosity as it passes down the long extended river of time.

In the second place, though cross-buns will be found to be heathenish in their origin, popish in their progress, and common in their continuance; they nevertheless bear reference to the Cross of Christ,—the fountain of salvation to all who look to it, in reliance on the merits of their Redeemer

Cecrops, one of the kings of Greece, about sixteen centuries before the Christian era, is said to have first offered up to the Divinity the sacred cross-bread, called a *bun*, (Greek *βουν*,) which was made of fine flour and honey. The prophet Jeremiah, who flourished about 600 years B.C., notices this kind of offering, when he speaks of the Jewish women at Pathros in Egypt, and of their base idolatry,—the *cakes*, which they offered up to the moon, the queen of heaven.

This cake or bun, which the Greeks called *βουν*, from the representation upon it of the two horns of an *ox*, is therefore a species of bread, which originally used to be offered to the gods, and it was usually purchased by the worshippers at the entrance of the temple, and taken in by them, and eaten at the feast of the remaining parts of the sacrifice; to which St. Paul alludes in 1 Cor. x. 28.

It is a remarkable fact, that at Herculaneum were found two small loaves of about five inches in diameter, marked with a cross, within which were four other lines; and so, we are told, the bread of the Greeks was marked from the earliest periods. Sometimes it had only four lines altogether, and then it was called *quadra*. This bread had rarely any other mark than a cross, which was on purpose to divide and break it more easily. Similar loaves were discovered in a bake-house at Pompeii. These towns were overwhelmed and destroyed by the volcanic eruption of Mount Vesuvius, A.D. 79.

In the course of time we find the Christian Church using cakes or buns, such as we have already referred to, and consecrating them: these were bestowed in the church as alms, and likewise to those who, from any impediment, could not receive the *host*, or consecrated wafer, at the usual time of the celebration of the Lord's supper. These buns were made from the dough, from which the host itself was taken, and they were given by the priest to the people after mass, just before the congregation was dismissed; and they were kissed before they were eaten. They were also marked with the cross, just as our present Good Friday buns are. This bun is the most popular symbol of the Roman Catholic religion in England that the Reformation has left to us.

Hot cross-buns have the usual form of buns; but they are inwardly distinguished from other buns by having a sweeter taste, and the flavour of allspice; and outwardly they are known by the mark of the cross, which, as our readers know, has been greatly insisted on in Papal worship and devotion, from the days of Constantine the Great, in the early part of the fourth century, to the present hour.

We see, therefore, that the bun of the ancient Greeks, crossed, to represent the horns of the ox which was sacrificed, and also for the purpose of more readily breaking it, was adopted by the Christians and used as the only food on the day of the Crucifixion, because it possessed, ready at hand, a symbol of that solemn event.

Many superstitions are connected with this species of bun. In some counties of England, great care is taken to preserve some of these cakes or buns, which being grated after they are dry, are esteemed by the credulous as infallible cures for many diseases. They have, however, been often found beneficial in bowel complaints.

In the houses of some ignorant people, a Good Friday bun is still kept "for luck;" and sometimes there hangs from the ceiling a hard biscuit, like cake of open *cross*-work, baked on a Good Friday, to remain there till displaced on the next Good Friday by one of similar make:—this is also supposed to preserve the house from fire.

Thus then the cakes or buns of Good Friday are marked with the sign of the Cross, in remembrance of the Crucifixion of our Saviour, who, having taken upon him the nature of man, suffered on this day for our redemption. The appellation of "Good," which has been conferred upon this day, is peculiar to the Church of England, and is accounted for, by referring to the blessed effects purchased for us by our Lord's sufferings. The ancient title of the day was "*Holy* Friday;" and the week in which it happens, is still denominated "*Holy*" or "*Passion week*."

THERE is a beautiful analogy between vegetable, and human life in early stages. No enduring and valuable fruit tree springs at once from the earth to maturity. It must go through a period of time, when it yields no fruit, and when it is an object of continual care and attention. Its nature must be considered, the earth around it must be kept in a fit state to promote its growth; its useless shoots must be cut off; its diseases, whether generated in itself, or caused by some invading foe, must be met and overcome. It may be let alone, and live, an incumbrance to the land, producing nothing worth gathering; or it may be an object on which the eye rests with pleasure, which its owner may be thankful for, and rationally proud to show. There is as much difference in the cares, anxieties, and duties, of raising a fruit tree, and bringing a human being to manhood, as the life of man is more precious than that of a tree.—S.

NOTHING strengthens a child in goodness, or enables him to overcome a fault, so much as seeing his efforts excite a sudden and earnest expression of love and joy.—MRS. CHILD.

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THE

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MEETING OF HECTOR AND ANDROMACHE, BY FLAXMAN.

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JOHN FLAXMAN AND HIS WORKS.

II.

Sculpture, in her turn,
Gives bond in stone and ever-during brass
To guard them, and to immortalize her trust.—Cowper.

When Flaxman was twenty-seven years old he ventured to enter upon business for himself, and apart from his father. Among other preliminaries to the new regulation of his career, he united himself in marriage with Anne Denman, a woman whom he had long loved, and who well deserved his affection. This step was taken by our artist from a belief that, in the society of her whom he loved, he should be able to work with an intenser spirit. But Sir Joshua Reynolds looked upon this matter in a very different light. "So, Flaxman," said the president, one day, as he chanced to meet him, "I am told you are married: if so, sir, I tell you you are ruined for an artist!" It is said that Flaxman went home, sat down beside his wife, took her hand, and said with a smile, "I am ruined for an artist." "John," said she, "how has this happened? and who has done it?" "It happened," he answered, "in the church, and Ann Denman has done it: I met Sir Joshua Reynolds just now, and he said that marriage had ruined me in my profession."

So unfavourable an opinion, coming from an authority so high and reputed, seemed, like a cloud, to dull the prospect before them,—but it was a cloud that passed away, and left "the sunshine of the breast" clear as it was before; for they very wisely considered the opinion of the president to be no more than the unguarded and peevish remark of a wealthy old bachelor. The course of experience soon showed, and confirmed him in the belief, that "wedlock is for a man's good, rather than for his harm." How could it be otherwise in his case? His wife was amiable and accomplished, had a taste for art and literature, and considerable knowledge of French, Italian, and Greek. But, what was more grateful than all in a wife, she was an enthusiastic admirer of his genius,—she cheered and encouraged him in his moments of despondency, and regulated modestly and prudently his domestic economy. "That tranquillity of mind, so essential to those who live by thought, was of his household; and the sculptor, happy in the company of one who had taste and enthusiasm, soon renewed with double zeal the studies which courtship and matrimony had for a time interrupted."

Flaxman's household, soon after his marriage, is thus described by one who respected and admired his genius and worth.

I remember him well; so do I his wife, and also his humble little house in Wardour-street. All was neat—nay, elegant—the figures from which he studied were the finest antiques—the nature which he copied was the fairest that could be had—and all in his studio was propriety and order. But what struck me most was that air of devout quiet which reigned everywhere: the models which he made, and the designs which he drew, were not more serene than he was himself, and his wife had that meek composure of manner which he so much loved in art. Yet, better than all, was the devout feeling of this singular man: there was no ostentatious display of piety—nay, he was in some sort a lover of mirth and sociality,—but he was a reader of the Scriptures, and a worshipper of sincerity; and, if ever Purity visited the earth, she resided with John Flaxman.

By incessant study and labour, for five years from the time of his marriage, Flaxman accumulated the means of visiting Italy, in order to study, in the Roman school, the productions of ancient and modern artists. During those five years he exhibited only seven works, nor were these his best. One of his first monuments was in memory of Collins, the poet, for Chichester cathedral*. It represents the poet sitting and reading the Bible, while his lyre and poetical compositions lie neglected on the ground. "I have but one book, sir," said Collins to Johnson, "but that is the best."

His monument to Mrs. Morley, in Gloucester cathedral, is considered to be a work of high order, though belonging to Flaxman's early years. This lady perished with her child at sea, and is poetically represented as called up by angels, with her babe, from the waves, and ascending into heaven. The effect is spoken of by Cunningham as inexpressibly touching—elevating the mind, and not without tears. It is a work of more than mortal loveliness, expressing the sentiment of immortality, and possessing a serene simplicity which accords with holy thoughts. Of the grouping of angels in another work of this date, the same biographer remarks that, "if ever figures were capable of rising from earth, these are, for they are buoyant without any effort."

In the year 1787 he set out for Rome, in company with his wife. His departure was thus alluded to in the newspapers:—"We understand that Flaxman, the sculptor, is about to leave his modest mansion in Wardour-street for Rome."

In Rome he sojourned for about seven years, admiring, studying, labouring, and thus supporting himself and his wife. He seems to have imbibed the idea of illustrating divine Revelation by his works, when he should return to the land of his birth. In the mean while it was necessary for him, as for many others of the children of genius, to seek his bread, by practising his art in accordance with the inclinations of those who employed him. The space to which we are here necessarily limited prevents us from entering into a detail of the illustrations of Homer, of Æschylus, and of Dante, which he executed by commission: they were all discharged from his mind on the purest principles of nature and the antique, and finished off with the nicest adjustments of manual skill.

Flaxman spent about seven years at Rome, which he turned to the best account. Before his return home he was elected a member of the academies of Florence and Carrara. Napoleon Buonaparte had just begun to attract the attention of mankind, and the events in the north of Italy probably quickened our sculptor's return. "I remember, a night or two before my departure from Rome," he once observed to a friend, "that the ambassador of the French proudly showed us, at an evening party, a medal of Buonaparte. 'There,' said he, 'is the hero who is to shake the monarchies of the earth, and raise the glory of the Republic.' I looked at the head, and said at once, 'This citizen Buonaparte of yours is the very image of Augustus Cæsar.' 'Image of a tyrant!' exclaimed the Frenchman, 'no, indeed: I tell you he is another sort of a man—he is a young enthusiastic hero, and dreams of nothing but liberty and equality!'" Reflecting men on this side the Channel, as well as on the Continent, more incredulous than the Frenchman, soon began to suspect Buonaparte to be the enemy of all who opposed him, and the tyrant of all who obeyed him.

On his return to England Flaxman established himself in Buckingham-street, Fitzroy-square, where he at once became known by his monument in memory of the Earl of Mansfield. This work had been commissioned during his residence at Rome.

The judge is seated, and in his robes; Wisdom is on one side, Justice on the other; and behind is a recumbent youth, whom the common accounts of the monument describe as Death, but who is, nevertheless, more like an unhappy mortal on whom sentence has been passed, and by Wisdom delivered up to Justice. For this magnificent work he had 2500*l.*

The statue of Mansfield is calm, simple, severe, and solitary: he sits alone, 'above all pomp, all passion, and all pride;' and there is that in his look which would embolden the innocent, and strike terror to the guilty,

* See *Saturday Magazine*, Vol. V., p. 27.

The figure of the condemned youth is certainly a fine conception. Hope has forsaken him, and already in his ears is the thickening hum of the multitude, eager to see him make his final account with time. This work raised high expectations. Banks said, when he saw it, 'This little man cuts us all out!'

While he was engaged on the statue of Mansfield, he designed with pen and pencil a series of allegorical representations, in which the chief adventurer is the Knight of the Burning Cross, a Christian hero, whose fortitude, faith, and courage, make him, though at first sorely assailed and almost vanquished, the conqueror in the end. These designs were executed as a tribute of affection to his wife, in whose society he had now lived fourteen years, and enjoyed the purest domestic happiness that could fall to the lot of man.

In 1797 he was elected an associate of the Royal Academy, and in the same year he sent to the exhibition three sketches in bas-relief from the New Testament, along with the monument of Sir William Jones. This monument now stands in the chapel of University College, Oxford; it is a bas-relief, and represents the accomplished judge engaged with some venerable Brahmins in a digest of the Hindoo code of laws. It is not considered that Flaxman excelled in works of this sort; he cannot be said to have had the art of giving grace or beauty to *modern* dresses, or to *modern* looks. The sketches before alluded to were from scriptural designs, and were distinguished for their elegance of grouping, and the clear language which they spoke. One was Christ raising the daughter of Jairus: the figures are one fourth the size of life, and but slightly raised; but for perfect innocence and serene loveliness, nothing can compete with them. He afterwards carved this in marble, on an enlarged scale, for a monument. The second was scarcely inferior, and might be said to have for its text,—"Comfort the feeble-minded, support the weak." (1 Thess. v. 14.) Ministering angels attend, in order to alleviate human sorrow. The third sketch is "Feeding the Hungry." In the year 1800 he was made a member of the Royal Academy, and on this occasion presented to the collection of the institution a marble group of Apollo and Marpessa.

Flaxman longed to be employed on some national work; and accordingly he proposed, when the subject of the grand naval pillar was agitated, to make a statue of Britannia, 200 feet high, and place it on Greenwich Hill. This proposal, however, was coldly received, and allowed to drop;—one critic accused him of wishing "to hew Greenwich Hill into a woman large enough to graze a couple of goats in her lap," while another gave notice, —"There is to be a show at Greenwich of *little* Flaxman and *big* Britannia."

The many noble works which now came from the hand of Flaxman made many people feel that a sculptor had at length appeared to vindicate the dignity of our national genius. One of these was a monument in memory of the family of Sir Francis Baring, for Micheldean Church, in Hampshire:—an excellent work, and said to be one of the finest pieces of motionless poetry in the land. It embodies the words,—"Thy will be done—thy kingdom come—deliver us from evil." To the first motto belongs a devotional figure, as large as life, a perfect image of piety and resignation: this figure forms the frontispiece of our former article, p. 105. On one side—"Thy kingdom come"—a mother and daughter ascend to the skies, welcomed, rather than supported by angels; and on the other—"Deliver us from evil"—a male figure in subdued agony appears in the air, while spirits of good and evil contend for the mastery. It was well said by Flaxman that "the Christian religion presents personages and subjects no less favourable to painting and sculpture than the ancient classics."

We cannot stay even to catalogue the other works of nearly equal beauty, though not of such extent, which followed this splendid monument. Of historical works he executed several; but they are not thought to be his ablest performances. Much of his poetic invention seems to have forsaken him, when he approached subjects of modern days. Hence it was, that, in such works, there was an occasional absence of true proportion, which no emendation could completely remedy. This is said to have resulted from his habit, in the former part of his life, of working his marbles from half-sized models, —a system which is injurious to true proportion; as the defects of the small model are much more than proportionally aggravated in the full-sized marble. When Flaxman latterly became sensible of the advantage of using large models, the change for the better was conspicuous in several of his historical works, both ancient and modern; but still his spirit followed after the grace and beauty of *classic* antiquity, and seemed to slumber in the representations of ordinary modern life.

The subject of our frontispiece is the meeting of Hector and Andromache, in one of the scenes of the Trojan war, as described by Homer in the sixth book of the *Iliad*. This production of Flaxman's is spoken of as exhibiting a severer kind of beauty—a mixture of manliness and matronly love. The quiet dignity of the hero is truly wonderful.

> With haste to meet him sprung the joyful fair,
> His blameless wife Aëtion's wealthy heir.
> The nurse stood near, in whose embraces pressed
> His only hope hung smiling at her breast,
> Whom each soft charm and early grace adorn,
> Fair as the new-born star that gilds the morn.
> * * * * *
> Silent the warrior smiled, and pleased, resigned
> To tender passions all his mighty mind:
> His beauteous princess casts a mournful look,
> Hung on his hand, and then dejected spoke;
> Her bosom laboured with a boding sigh,
> And the big tear stood trembling in her eye.

When the peace of Amiens, in the year 1802, opened the way to France, Flaxman visited Paris, to see the splendid collections of paintings in the Louvre. These had been taken, by the right of conquest, from the states of Italy, but were restored by the decision of the allies at the downfall of Buonaparte. Whatever pleasure our artist might have felt in his professional visit to France, he seems to have been anything but delighted with the ruling spirits of the coming empire. He held it to be unsafe, or at least unwise, to keep company with persons, however clever and brilliant, whose moral and religious opinions were inimical to the natural law of mercy and loving-kindness, and to the religion revealed by heaven. He returned the civilities of the First Consul with stately courtesy, refused to be introduced to him, and left France with a confirmed opinion, that the physiognomy of Buonaparte corresponded with that of Augustus, and that ere long he would openly play the part of a tyrant.

At this time, Flaxman, though a professing member of the Established Church, had long listened to the doctrines of Swedenborg, and was become all but a proselyte. He did not, however, openly associate with this sect; though it was evident that he coloured his conversation and way of life, to a certain extent, with the mysticism of this visionary. Flaxman was, in religion, certainly of a devout and quiet imagination: but still his domestic character was gay, cheerful, and companionable. In the next paper we will describe the latter scenes of the sculptor's life.

It may be said that there is a connexion between cleanliness and moral feeling. Perhaps it may be going too far to say, that those who habitually disregard cleanliness, and prefer to be dirty, have no moral perception; but it it may be truly said, that those who are morally sensitive, are the more so from respecting this virtue. There is a close affinity between moral depravity and physical degradation.—S.

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ON CHESS.

VIII. CHESS WRITERS AND PLAYERS, (*continued.*)

THE CHESS QUEEN, AS DESIGNED BY FLAXMAN

The Queens, exulting, near their consorts stand;
Each bears a deadly falchion in her hand:
Now here, now there, they bound with furious pride,
And thin the trembling ranks from side to side;
Swift as Camilla flying o'er the main,
Or lightly skimming o'er the dewy plain:
Fierce as they seem, some bold plebeian spear
May pierce their shield, or stop their full career.

SIR W. JONES.

We have already spoken of the appearance of a regular treatise on chess, by *Jacobus de Cesolis*, about the year 1200. This Cesolis, (whose name, we may observe, is spelt in upwards of twenty different ways,) is said to have been a native of the village of Cessoles, near the frontiers of Picardy and Champagne. His manuscript was translated into German verse by *Conrad Ammenhusen*, a monk of Stettin, in 1337. After the invention of printing, the work of Cesolis went through many editions and translations. Editions in Latin, German, Dutch, French, Italian, and English, appeared within a short period of each other. The English translation, by William Caxton, printed in 1474, is a small folio of 144 pages, dedicated "to the right noble, right excellent, and vertuous Prince George, Duc of Clarence, Erle of Warwyk and of Salysburye, grete Chamberlayn of Englonde, and leutenant of Irelond, oldest broder of Kynge Edward (IV.)" It begins thus:—"I have put me indevour to translate a lityll book, late comen in to myn handes, out of frensh in to englishe, in which I find thauctorites, dictees, and stories of auncient doctours, philosophes, poetes, and of other wyse men which been recounted, and applied unto chesse."

This translation of Caxton's is the more interesting on account of its being the second book ever printed in England, and the first in which metal types were employed. The forms and names of the chess-pieces, as given by Cesolis, are as follows:—The king sits on his throne, with a crown on his head, a sceptre in his right hand, and a globe in his left. The queen on a chair, with a mantle of ermine. The alfin, or bishop, is represented as a lawyer, seated, with a book outspread on his knees; and the distinction is drawn that he on the white square is for civil, and he on the black square for criminal cases. The knights are on horseback, in full armour. The rooks, legates, or vicars, are men on horseback, quite unarmed. The description of the pawns is, however, the most remarkable, on account of the variety in their form, and in the offices assigned to them. The king's pawn has a pair of scales in his right hand, in his left a measuring wand, and a purse hanging at his waist-band. The queen's pawn is a man seated in an arm-chair, with a book in one hand, a vial in the other, and various surgical instruments stuck in his girdle. This personage represents a physician, who, to be perfect, ought, according to our author, to be a grammarian, logician, rhetorician, astrologer, arithmetician, geometrician, and musician. The king's bishop's pawn is a man with a pair of shears in one hand, a knife in the other, an inkhorn at his button-hole, and a pen behind his ear. The queen's bishop's pawn is a man standing at his own door, with a glass of wine in one hand, a loaf in the other, and a bunch of keys at his girdle. The king's knight's pawn is a smith, with hammer and trowel. The queen's knight's pawn carries keys, and compasses, and an open purse. The king's rook's pawn is a husbandman, with bill-hook in hand, and a pruning knife at his girdle. The queen's rook's pawn, with dishevelled hair, and in rags, displays four dice in one hand, and a crust of bread in the other, a bag being suspended from his shoulder. All these pawns are defined by Caxton to represent the following description of persons:—

Labourers, and tilinge of the erthe.
Smythes, and other werkes in yron and metals.
Drapers, and makers of cloth and notaries.
Marchaunts and chaungers.
Phisicyens and cirurgiens, and apotecaries.
Taverners and hostelers.
Gardes of the cities and tollers and customers.
Ribaulds, players at dyse, and the messagers.

The second edition of *The Game and Playe of the Chesse*, (such was the title of Caxton's book,) appeared in 1490. It is decorated with seventeen prints, and has a curious preface, which, with the concluding paragraph of the work, also written by Caxton, we now lay before our readers.

The holy appostle and doctour of the peple, Saynt Poule, sayth in his epystle, Alle that is wryten is wryten unto our doctryne, and for our servying. Wherfore many noble clerkes have endevoyred them to wryte and compyle many notable werkys and historyes to the ende that it myght come to the knowledge and understondying of suche as ben ygnoraunt of which the nombre is infenyte, and accordying to the same saith Salamon that the nombre of foles is infenyte, and emong alle other good werkys it is a werke of ryght special recomendacion to enforme, and to late understonde wysedom and vertue unto them that be not lernyd, ne can not dyscerne wysedom fro folye. Thene emonge whom there was an excellent doctour of dyvynyte in the royaume of fraunce of the ordre of thospytal of saynt iohns of iherusalem whiche entended the same and hath made a book of chesse moralysed, which at such time as i was resident in Brudgys in the counte of flaunders cam into my handes, which whan i had redde and overseen, me semed ful necessarye for to be had in englische, and in eschewing of ydlenes. And to thende that some which have not seen it ne understonde frensh ne latyn, i delybered in myself to translate it into our maternal tonge, and when i had acheyved the said translacion i did doo sett in emprynte a certyn nombre of them, which anone were despesshed and solde. Wherfore by cause this said boke is ful of holsom wysedom and requysyte unto every estate and degree, i have purposed to emprynte it shewing therfore the figures of such persones as longen to the playe, in whom al astates and degrees ben comprysed, besechen al them that this litel werke shall see, here, or rede, to have me for excused for the rude and symple makyng and reducyng into our englisshe, and whereas is defaute to correcte and amende and in so doyng they shall deserve meryte and thanke, and i shall pray for them, that god of his grete mercy shal rewarde them in his everlastyng blisse in heven, to the whiche he brynge us, that wyth his precious blood redemed us Amen.

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The closing paragraph is as follows:—

And a man that lyveth in this worlde without vertues liveth not as a man, but as a beste. Thenne let euery man of what condycion he be that redyth, or herith this litel book redde, take thereby ensample to amende hym.

The work of Cesolis, though it went through so many editions and translations, gave no rules for the playing of the game. This deficiency was soon after supplied in the treatises of Vicent and of Lucena, (both ascribed to the year 1495,) but more completely by that of Damiano, a Portuguese, in 1512. The latter work was originally written in Spanish and Italian, and consists chiefly of the openings of the game known as the *Giuoco Piano*. The "Ends of Games" and "Problems" difficult of solution, which conclude his volume, are many of them taken from the work of Lucena. His small book is, however, deficient in the principal openings, and expatiates chiefly on games where advantage is given. The work of Damiano was reprinted under the direction of D. Antonio Porto, who unjustly prefixed his own name as the author, although he had not made the slightest addition to the volume, or alteration of it. In 1527 Mark Jerome Vida, of Cremona, bishop of Alba, published a Latin poem on chess, called *Scacchia Ludus;* which has gone through many editions in Latin, Italian, French, and English. Pope notices this author in his *Essay on Criticism:*—

> Immortal Vida, on whose honoured brow,
> The poet's bays, and critic's ivy grow.

And Warton, in his *Essay on Pope*, speaks of Vida's poem in the following terms:—"It was a happy choice to write a poem on chess; nor is the execution less happy. The various stratagems and manifold intricacies of this ingenious game, so difficult to be described in Latin, are here expressed with the greatest perspicuity and elegance, so that, perhaps, the game might be learned from this description." That this poem was valued and admired by contemporary authors is plain from the language of Pasquier, who wrote in 1560, and thus speaks:—"Jerom Vida represented this fine game of chess in the form of a battle, and his Latin verses are in the true spirit of Virgil." Specimens of the various English versification of this work are given by Twiss, but they do not appear to us sufficiently interesting for insertion here.

In 1561 appeared, in Spanish, the "Book of the liberal Invention and Art of the Game of Chess, by Ruy Lopez de Sigura, clerk, inhabitant of the town of Cafra. Directed to the illustrious lord, Don Garcia de Toledo." This work is said to have added little to the knowledge of chess; and the author, while censuring Damiano, and speaking contemptuously likewise of all the Italian players, was himself guilty of many errors, which were still further increased by his translator and printer. A few years after the publication of this book, the vanity of the author met with a severe check in the defeat he suffered in the presence of Philip II., king of Spain, as the following anecdote will show:—A young man of Cutri, in Calabria, named Leonardo, went to Rome, during the pontificate of Gregory XIII., to study the law; but gave his attention much more to the study of chess, in which game he became so skilful, that though very young, and therefore called *Il Puttino*, the boy, he soon conquered all the best players. Ruy Lopez, who was an ecclesiastic, and at that time considered the first chess-player in Europe, came to Rome at this time, to solicit the pope for a benefice which had then become vacant at the court of Philip II. of Spain. Having heard of the young Leonard's fame, he sought his acquaintance, and conquered him two following days; which vexed Leonardo so much that he immediately went to Naples, and devoted himself to the study and practice of chess for the space of two years. Returning from thence to his native place, he learned that his brother had been taken by corsairs, and chained to the oar. Leonardo set out to ransom him, and agreed with the reis or captain of the galley on the price of his dismissal, which was to be two hundred crowns. Finding that the captain understood chess, Leonardo engaged him in play, and succeeded in winning from him the price agreed on for his brother's ransom, and two hundred crowns besides. With this he returned to Naples; from thence he sailed to Genoa, Marseilles, and Barcelona, playing with and conquering all he met; and then travelled to Madrid, where he soon revenged himself on his old antagonist, Ruy Lopez, by beating him at chess in the presence of the king. On this occasion Philip presented Leonardo with a thousand crowns, besides jewels, furs, &c. The victor then went to Lisbon, where success and honours likewise attended him, and where he received the title of knight-errant. On revisiting Calabria, at a subsequent period, he was poisoned by some envious person in the palace of Prince Bisignano, and died in the forty-sixth year of his age. Such are some of the particulars of the life of Leonardo of Cutri, as given in the work *Il Puttino*, published by Salvio, of Naples, of whose reputation as a master of chess we shall speak in due order.

CHURCHES IN LONDON.—Place yourself on the summit of that magnificent church which crowns our imperial city; from thence, survey the prospect unfolded to your ken. Immediately below you are thickly spread the monuments of former munificence and piety,—those numerous churches reared by kings, and nobles, and merchants, and religious bodies. Direct your view a little further, and, gradually, *these*, the most interesting features of the landscape, are found to disappear, until, at length, it is only here and there that some solitary tower or steeple breaks the monotonous expanse of house-tops, showing us that God is not *utterly* forgotten,—that some *few* among his creatures still possess the privilege of worshipping their great Creator.

So situated, while *above* all seems fair and bright, and *below* all is gilded by the sunshine, I behold, on the verge of the horizon, a dark belt of angry clouds, slowly but surely "gathering blackness," from whence, ere long, there will burst forth the tempest and the storm,—"hail-stones and coals of fire."—BISHOP BLOMFIELD.

VACCINATION.—Most people now have their children vaccinated; but all are not aware that *care and attention* are required in order that it should really be a preventive from that dreadful disorder, the small-pox. If a gentleman's child is vaccinated, great care is taken to preserve the arms from being *rubbed*, or in any way *disturbed* afterwards. It is seen again by the doctor on the *very day* he *desires* to see it: if only *one place*, of the several places where it is vaccinated, *takes*, *that* place is not touched or opened, but left to dry away; and if, after all, the doctor is not *satisfied* that it *has taken*, after a time the child is vaccinated again. Great attention is also paid in *all cases* by the doctors, that the matter should be in a fit state, and taken at the proper time. It is a general complaint, however, that the lower classes *will not* pay attention to the most important part of the business,—letting the doctor see the child *again* on the *very* day he fixes, and taking care to prevent the arm being touched or rubbed in any way. "It has been vaccinated," and they think it safe; do not keep away from small-pox (which even *after* inoculation should be avoided, if possible, as many have had it again); and are astonished that it is taken, and that vaccination has "FAILED," which, with *care*, it *very seldom* does; and even if people do take the small-pox, they have it, after vaccination, very slightly. At first, thirty or forty years ago, it was not so well understood, and perhaps some mistakes were made which are now corrected. One place only was vaccinated, and that place opened. Perhaps, in such cases, it would be safer to vaccinate again. Doctors can tell by the marks, if vaccination took or not. If parents who did not take their children to the doctor as desired, a second time, *would now* have the marks examined very carefully, it might save their children from risk, as, *if* necessary, they could be vaccinated again.

[From *Useful Hints, Second Series;* published by the Labourer's Friend Society.]

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THE LANDSCAPES—ENGLISH AND INDIAN.

I stood upon an English hill,
And saw the far meandering rill,
A vein of liquid silver, run
Sparkling in the summer sun;
While adown that green hill's side,
And along the valley wide,
Sheep, like small clouds touched with light,
Or like little breakers bright
Sprinkled o'er a smiling sea,
Seemed to float at liberty.

Scattered all around were seen
White cots on the meadows green,
Open to the sky and breeze,
Or peering through the sheltering trees,
On rustic gateways, loosely swung,
Laughing children idly hung:
Oft their glad shouts, shrill and clear,
Came upon the startled ear,
Blended with the tremulous bleat
Of truant lambs, or voices sweet,
Of birds that take us by surprise,
And mock the quickly-searching eyes.

Nearer sat a bright-haired boy,
Whistling with a thoughtless joy;
A shepherd's crook was in his hand,
Emblem of a mild command;
And upon his rounded cheek
Were hues that ripened apples streak.
Disease, nor pain, nor sorrowing,
Touched that small Arcadian king.
His sinless subjects wandered free—
Confusion without anarchy.
Happier he upon his throne,
The breezy hill—though all alone—
Than the grandest monarchs proud,
Who mistrust the kneeling crowd;
For *he* ne'er trembles for his fate,
Nor groans beneath the cares of state.

On a gently rising ground,
The lovely valley's farthest bound,
Bordered by an ancient wood,
The cots in thicker clusters stood;
And a church uprose between,
Hallowing the peaceful scene.
Distance o'er its old walls threw
A soft and dim cerulean hue,
While the sunlit gilded spire
Gleamed as with celestial fire!

I have crossed the ocean-wave
Haply for a foreign grave—
Haply never more to look
On a British hill or brook—
Haply never more to hear
Sounds unto my childhood dear;—
Yet if sometimes on my soul,
Bitter thoughts beyond control
Throw a shade more dark than night,
Soon upon the mental sight
Flashes forth a pleasant ray,
Brighter, holier, than the day;
And unto that happy mood
All seems beautiful and good.

Though from home and friends we part,
Nature and the human heart
Still may soothe the wanderer's care,
And his God is everywhere!

Seated on a bank of green,
Gazing on an Indian scene,
I have dreams the mind to cheer,
And a feast for eye and ear.
At my feet a river flows,
And its broad face richly glows
With the glory of the sun,
Whose proud race is nearly run.
Ne'er before did sea or stream
Kindle thus beneath his beam,
Ne'er did miser's eye behold
Such a glittering mass of gold!
'Gainst the gorgeous radiance float
Darkly, many a sloop and boat,
While in each the figures seem
Like the shadows of a dream;
Swift, yet passively, they glide
As sliders on a frozen tide.

Sinks the sun—the sudden night
Falls, yet still the scene is bright.
Now the fire-fly's living spark
Glances through the foliage dark,
And along the dusky stream
Myriad lamps with ruddy gleam
On the small waves float and quiver,
As if upon the favoured river,
And to mark the sacred hour,
Stars had fallen in a shower.
For many a mile is either shore
Illumined with a countless store
Of lustres ranged in glittering rows;
Each a golden column throws,
To light the dim depths of the tide;
And the moon in all her pride,
Though beauteously her regions glow,
Views a scene as fair below *.

Never yet hath waking vision
Wrought a picture more Elysian;
Never gifted poet seen
Aught more radiant and serene!
Though upon my native shore
Mid the hallowed haunts of yore
There are scenes that could impart
Dearer pleasure to my heart,
Scenes that in the soft light gleam
Of each unforgotten dream,
Yet the soul were dull and cold,
That its tribute could withhold
When enchantment's magic wand
Waves o'er this romantic land!

* This description has reference to the night of some religious festival.

[RICHARDSON'S *Literary Leaves.*]

WE cannot comprehend the wonders of *creation*, much less those of the *resurrection*. For our *belief* in the possibility of this stupendous mystery, we trust to *reason*; for the *certainty of it*, to *revelation*; for the *performance of it* to *Omnipotence!*—DAUBENY.

UNJUSTIFIABLENESS OF REVENGE.—Let every one beware how he indulges the idea of returning evil for evil. In such deplorable contests, it is always he who comes off, as he may think, the conqueror, that is the most really to be pitied.—ST. GREGORY.

IF the very great, the enormous power of the Deity is sometimes urged, from a comparison with the feebleness and littleness of man; if his insignificance in the inappreciable extent of creation is pointed out; it is still, for the purpose of comparison, not with a design to debase him. Man himself is a great effort of power; the more extraordinary that Power which could perform so much more. The nations of the world are as dust in the balance: but the poet intended to magnify God, to whom even nations could be as that dust which is unfelt. Yet, nevertheless, He is "mindful" of man. This is to understand our just relations to Him. The lesson which natural history conveys, from the extent and the population of the unbounded universe, is not a lesson of despair. The same argument which had depressed us, serves to elevate us again when it is justly contemplated. When man looks above at the boundless heaven of orbs and their incomputable inhabitants, he shrinks before the thought; when he inspects the myriads, of incalculable smallness, and utter apparent insignificance, beneath, he rises again, secure that He, who thinks for them, as He erected them, thinks also for him, thinks and cares for all. But I have fallen, unawares, into the argument used by the highest authority which we have known on earth. That He appealed to natural history is a warranty for the choice here made; that His arguments were those of natural religion ought to prove that He thought this study worthy of man, when He thought it not beneath Himself.—MACCULLOCH.

ARISTIPPUS very properly replied to a man who boasted of his reading,—"It is not those who eat the most who are hale and healthy, but those who can best digest."—MELLINGEN'S *Experience.*

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A BRIEF HISTORY OF GLOVES,

ANCIENT AND MODERN.

WHEN we draw upon our hands the comfortable and useful articles termed GLOVES, we are apt to think them an invention of *modern* luxury or convenience, and need to be reminded that they were much in use in very early times. We intend, therefore, to consider this subject with reference both to the ancient and to the modern condition of the world.

As the Old Testament is one of the most ancient books now existing, we naturally look first to it, for some allusions to the subject under consideration. In the book of Ruth (ch. iv., v. 7,) the custom is noticed of a man taking off his *shoe*, and giving it to his neighbour, as a pledge for redeeming or exchanging any thing. The events of the book of Ruth belong to the year 1245 B.C., and the word in this text usually translated *shoe* by the Chaldee paraphrast is in this place rendered *glove*. A like supposition is offered with regard to the passage at Psalm cviii. 9, where the royal prophet declares he will cast his *shoe* over Edom. The expression occurs likewise at Psalm lx. 8, and both these religious hymns were composed about the year 1040 B.C. Casaubon is of opinion that *gloves* were worn by the Chaldeans, from the word used in the book of Ruth being explained in the Talmud Lexicon by *the clothing of the hand*.

Xenophon tells us that the ancient Persians used gloves: when describing their manners, he cites this as a proof of their effeminacy. Homer describes Laertes, the father of Ulysses, as working in his garden with gloves on his hands, to secure them from the thorns. Now Homer lived about 900, and Xenophon about 400 years B.C.

Varro, who lived in the time of Cicero, tells us of their long-standing use among the Romans. He wrote a book on "Rural Business," wherein he tells us that olives gathered with the naked hand are preferable to those gathered with gloves. Athenæus speaks of a celebrated glutton, who always came to table with gloves on his hands, that he might be able to handle and eat the meat while hot, and devour more than the rest of the company.

Thus far it would seem that gloves were not so much an ordinary covering, as a protection used for specific purposes: the use of them among the ancients was therefore not so common as among the moderns. In a hot climate the wearing of gloves implies a considerable degree of effeminacy, so that the early use of gloves can be more clearly traced among northern nations. When the primitive simplicity of Rome had passed away, the philosophers were found to rail at the prevailing use of gloves. Pliny the younger informs us, in his account of his uncle's journey to Vesuvius, that his secretary sat by him, ready to write down anything remarkable that occurred; and that he had gloves on his hands, that the coldness of the weather might not impede his business.

It is curious to find that Musonius, a philosopher who lived at the close of the first century of Christianity, among other invectives against the corruption of the age, says:—"It is shameful that persons in perfect health should clothe their hands and feet with soft and hairy coverings."

The use of these articles kept on progressing, until, at the beginning of the ninth century after Christ, the church began to lay down regulations for this part of dress. At the Council of Aix it was ordained that the monks should wear gloves made of sheep-skin. Surius tells us a Romish legend respecting St. Gudula, the patroness of Brussels, that, as she was praying in a church, without her shoes, the priest compassionately put his gloves under her feet; but she threw them away, and they miraculously hung in the air for the space of an hour,—whether in compliment to the saint or the priest does not appear.

Gloves have been used on several great and solemn occasions, as in the ceremony of investitures, in bestowing lands, or in conferring dignities. Giving possession by delivering a glove has prevailed in several parts of Christendom in later ages. Bishops have been instituted to their sees by means of the glove; and it was thought so necessary a part of the episcopal habit, that when some abbots in France presumed to wear gloves, the Council of Poitiers interposed, and forbad them, as peculiar to the bishop alone.

The custom of blessing gloves at the coronation of the kings of France is a remnant of the Eastern practice of investiture by a glove. The influence of this notion is exhibited in the case of the unfortunate Conradin, who was deprived of his crown and life by the usurper Mainfroy. When he had mounted the scaffold the injured prince lamented his hard fate, asserted his right to the crown, and, as a token of investiture, threw his glove among the crowd, intreating it might be conveyed to some of his relations, who would avenge his death. It was taken up by a knight, and carried to Peter, king of Arragon, who, in virtue of this glove, was afterwards crowned at Palermo, in Sicily.

To deprive a person of his gloves was a mark of divesting or depriving him of his office. When the Earl of Carlisle, in the reign of Edward the Second, was impeached of holding a correspondence with the Scots, and was condemned to die as a traitor, his spurs were cut off with a hatchet, and his *gloves* and shoes were taken off.

In former ages the throwing down of a glove constituted a challenge, which he accepted who took it up. Such sort of single combat was meant as a trial of innocence, and was likewise often practised for deciding rights and property. This custom was continued down to the reign of Elizabeth. A dispute concerning some lands in the county of Kent was appointed to be settled by duel in Tothill-fields, in the year 1571. The plaintiffs had appeared in court, and demanded single combat. One of them threw down his glove, which the other party immediately taking up, carried off on the point of his sword, and the day of fighting was appointed: but this affair was adjusted by the judicious interference of the queen.

In Germany, on receiving an affront, to send a glove to the offending party is a challenge to a duel; and this method of daring a person to fight, has been in use even in this country, where local circumstances made feuds and animosities common; as the following narration will show.

Bernard Gilpin was a faithful ecclesiastic of the sixteenth century, whose spiritual work was carried on among the northern borderers. On a certain Sunday going to preach in those parts wherein deadly feuds prevailed, he observed a glove, hanging up on high in the church. He demanded of the sexton what it meant, and why it hung there. The sexton answered that it was a glove which one of the parishioners had hung up there as a challenge to his enemy; signifying thereby, that he was ready to enter into combat hand to hand, with him, or any one else, who should dare to take the glove down. Mr. Gilpin requested the sexton to take it down. "Not I, sir," replied he, "I dare do no such thing." Then Mr. Gilpin, calling for a long staff, took down the glove himself, and put it in his bosom. By and by, when the people came to church, and Mr. Gilpin in due time went up into the pulpit, he in his sermon reproved the barbarous custom of challenges, and especially the custom which they had of making challenges by the hanging up of a glove. "I hear," said he, "that there is one amongst you, who even in this sacred place, hath hanged up a glove to this purpose, and threateneth to enter into combat with whosoever shall take it down. Behold, I have taken it down myself." Then, plucking out the glove, he showed it openly, and, inveighing against such practices in any

man that professed himself a Christian, endeavoured to persuade them to the practice of mutual love and charity.

At the coronation of George IV., in 1821, the ceremony was performed, probably for the last time, of challenging by a glove any one to dispute the right of the sovereign to the crown. His majesty's champion entered Westminster-hall completely armed and mounted, and threw down his glove.

Gloves were also particularly used for carrying the hawk, which princes, and other great men, formerly took much pleasure in doing; so that some of them have chosen to be represented in this attitude.

Judges were formerly forbidden to wear gloves on the bench; but both they and the rest of the court receive gloves from the sheriffs, whenever the session or assize concludes without any one receiving sentence of death: this is a custom of great antiquity.

It appears likewise to have been a custom not to enter the stables of princes, or other great men, without pulling off the gloves, under the penalty of forfeiting them, or of redeeming them by a fee to the servants. This custom is likewise observed in some places at the death of the stag; in which case, if the gloves are not taken off, they are redeemed by money given to the keepers and huntsmen. The King of France always pulled off one of his gloves on this occasion; but the reason for this custom seems to be lost.

Gloves are usually presented at weddings and funerals. By the term *glove-money* is meant money given to servants to buy gloves: this was done because they were more expensive formerly than they are now. Gloves were also a customary new-year's gift. When Sir Thomas More, as lord chancellor, decreed in favour of Mrs. Croaker against Lord Arundel, she, on the following New Year's day, in token of her gratitude, presented him with a pair of gloves containing forty angels. "It would be against good manners," said the chancellor, "to forsake a gentlewoman's New Year's gift, and I accept the gloves; their *lining* you will be pleased otherwise to bestow."

A person in company, who first sees the new moon, and thereupon salutes his fair companion, has a claim upon her for a pair of new gloves. This custom is peculiar to some of the northern parts of England.

It appears that gloves did not form part of the female dress, until after the Reformation. In the time of Queen Anne they were richly worked and embroidered.

Some of the oldest gloves extant exist in the Denny family. At the sale of the Earl of Arran's goods, April 6, 1759, the gloves given by Henry VIII. to Sir Anthony Denny were sold for 38*l.* 17*s.*; those given by James I. to his son Edward Denny, for 22*l.* 4*s.*; the mittens given by Queen Elizabeth to Sir Edward Denny's lady, 25*l.* 4*s.*; all which were bought for Sir Thomas Denny of Ireland, who was descended in a direct line from the great Sir Anthony Denny, one of the executors of the will of Henry VIII.

The principal leather glove manufactures in England are at Worcester, Woodstock, Yeovil, Leominster, Ludlow, and London. The number made in the town and neighbourhood of Worcester annually, has been estimated at more than six millions of pairs. At Yeovil about two thirds of that quantity are supposed to be produced, and the number of persons, including men, women, and children, engaged in the manufactures at these places, is said to be regularly increasing. Of late years, cotton or Berlin gloves have been much in use; and foreign leather gloves, principally of French manufacture, have been imported, the duty on the latter of which has amounted to 30,000*l.* per annum. Owing, however, to the increased use of gloves, the English trade at home is said to have experienced some increase. Silk gloves are chiefly made in the town of Derby: this department of the manufacture is connected with that of silk stockings. A simple and ingenious apparatus is used for performing the process of glove-sewing, with accuracy and dispatch, when the respective pieces have been cut out.

POISONOUS FLIES.

NEAR this place (Castle of Golubaes) we found a range of caverns, famous for producing the poisonous fly, too well known in Servia and Hungary, under the name of the Golubaeser fly. These singular and venomous insects, somewhat resembling musquitoes, generally make their appearance, during the first great heat of summer, in such numbers as to seem like vast volumes of smoke; their attacks are always directed against every description of quadruped, and so potent is the poison they communicate, that even an ox is unable to withstand its influence, for he always expires in less than two hours. This results, not so much from the virulence of the poison, as that every vulnerable part is simultaneously covered with these most destructive insects; when the wretched animals, frenzied with pain, rush wild through the fields, till death puts a period to their sufferings, or they accelerate dissolution by plunging headlong into the rivers.

The shepherds of these countries, taught by experience the time of their approach, anoint every part of their flocks and herds, unprotected by nature, with a strong decoction of wormwood, to which, it appears, these flies have a great antipathy. In addition to this, the shepherds keep immense fires constantly blazing, around which the poor animals, aware of their danger, tremblingly and patiently congregate. Kind Nature has, however, mercifully ordained that their existence shall be most ephemeral, for the slightest variation in the weather is sufficient to destroy the whole swarm; hence they seldom live beyond a few days: indeed their very production seems to depend upon the state of the weather: for, in those summers when the thermometer continues low, they never make their appearance except in diminished numbers; whereas, when great heat and drought prevail during the whole of that season, they have been known to swarm two, or even three times, although even then their existence is always extremely brief.

Their ravages are principally confined to the surrounding countries of Servia and the Hungarian Banate; but on some occasions they have been known to extend their flight as far as the neighbourhood of Presburg, when their attacks were fatal to numbers of cattle. The peasants for this, as for every other phenomenon, have resorted to a miracle for explanation, and tell us, that in these caverns the renowned champion, St. George, killed the dragon, whose decomposed remains have continued to generate these insects down to the present day. The probable supposition, however, is, that when the Danube rises, which it always does in the early part of summer, the caverns are flooded, and the water remaining in them becomes putrid, and produces, during the heat of summer, this noxious fly. The inhabitants of the country, many years since, closed up the mouths of the caverns with stone walls, for the purpose of preventing their egress; but the expedient availed nothing, and the rushing of the waters against the sides of the rocks, in process of time, destroyed the useless defence; so that it must be evident, either that the insects are not generated here, or that the caverns have subterraneous communications with some other outlets at present unknown.—SPENCER'S *Travels in Circassia.*

IF there be any one who faithfully examines the book of Nature, and the book of Revelation, to ascertain the truth, just as he would inquire into the reasons and probabilities on which he must found the expectation of any temporal benefit; if, after having done this, he find no assurance, and still doubt, let him ask himself the question: Although these things are not proved to my mind, is it proved to me that these things cannot be so? If they may be so, how earnestly does it concern me to live as though they were most clearly demonstrated.—S.

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THE

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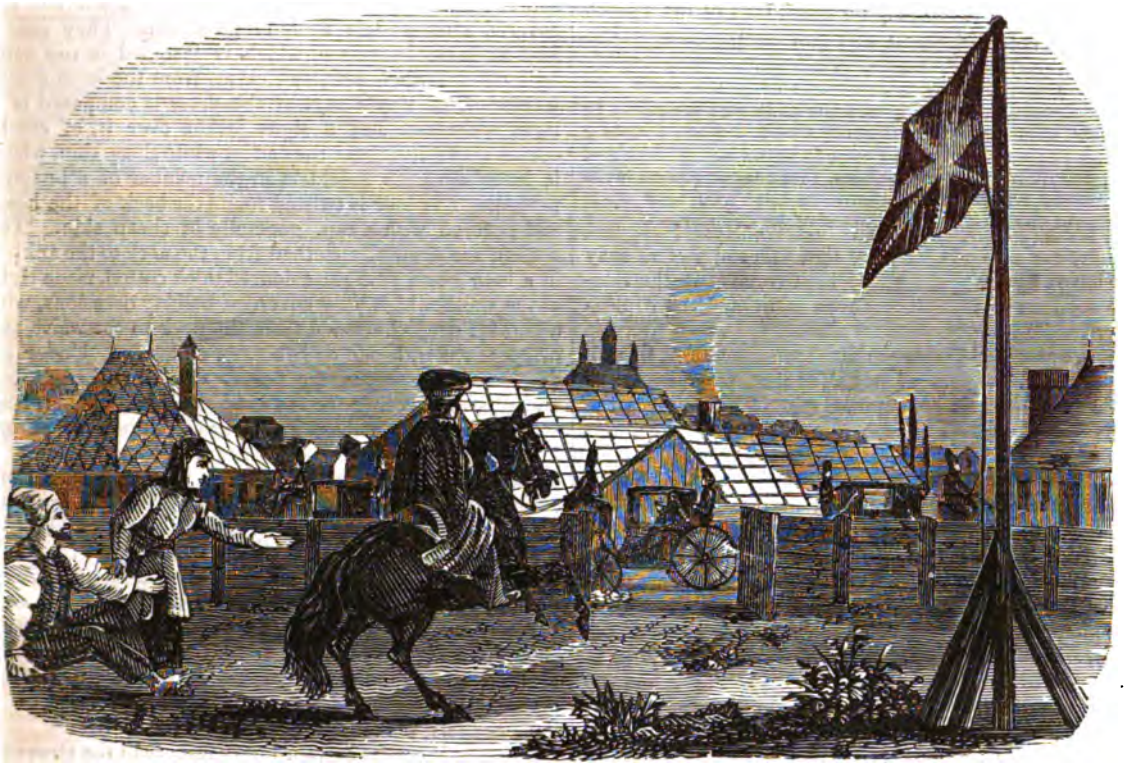
TURKEY AND THE TURKISH PROVINCES.



PUBLIC PROMENADE AT JASSY.

MOLDAVIA AND THE MOLDAVIANS.

MOLDAVIA is the most northern province in Turkey. It is bounded on the east by Bessarabia, a province which formed part of Turkey until 1812, when it was ceded to Russia; on the south by Wallachia; and on the west and north by provinces of the Austrian empire;—the province forming a compact territory about 200 miles in length, and 120 in breadth.

Moldavia formed part of the Byzantine or Eastern Empire, and suffered greatly from the incursions of the rude hordes which infested Europe in the middle ages. About the middle of the thirteenth century, the province was governed by Bogdau, a Slavonic chief; and for some time afterwards, the military leader, or *Voyvode*, of Moldavia, was generally independent of superior authority. At length, the Turks conquered Constantinople from the Greek emperors; and Moldavia, by a timely submission, was enabled to obtain favourable treatment from the conquerors. The sultan was to protect the province; the inhabitants were to pay an annual tribute for this protection; Turks were prohibited from interfering with the native inhabitants; the Voyvodes were to be elected by the principal clergy and nobles, uncontrolled by the sultan; the Voyvode had power of life and death, peace and war, without consulting the sultan; and no Moldavian was compelled to leave his province. to enter into the sultan's service.

The Voyvodes governed with the assistance of a council, or divan, composed of twelve members appointed annually by him. The laws were framed after the Justinian code; and the Voyvode kept up an army of 6000 men. The annual tribute paid to the sultan was not large; but the inhabitants suffered from certain oppressive commercial regulations. Wheat, timber, cattle, and other articles, were exported to Constantinople, and sold at a fixed price, which was not above one fourth of the current market price.

In this situation did Moldavia remain for two centuries, disturbed occasionally by the wars between Turkey and Poland. At length, the ambitious Czar of Russia directed his attention to this province; and after several attempts, Russia succeeded, in 1774, in gaining the position of a kind of intercessor between the sultan and the Moldavians, by which certain advantages were given to the latter. In 1792, fresh advantages were granted to the Moldavians by the sultan, at the instance of Russia. In 1812, the latter power succeeded in getting possession of that part of Moldavia called Bessarabia, situated eastward of the river Pruth; and at subsequent periods she has frequently interfered between the sultan and the Moldavians, to gain advantages for the latter, but whether with any ulterior object time will show. Certain it is, that by the Treaty of Adrianople, in 1829, Moldavia has been placed in a more independent position, with regard to the sultan, than it has yet occupied. The Voyvode, called also *Hospodar*, is elected by the inhabitants for life; the corn, provisions, cattle, and timber, are exempted from the vexatious regulations formerly existing; and various other regulations have secured to the Moldavians a degree of liberty scarcely found in any other part of the Turkish empire.

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The inhabitants of Moldavia amount to about half a million, and consist of native Moldavians, Jews, Armenians, and gypsies. Mr. Wilkinson, who was British consul at Bukhorest before the improvements had taken place in the government and condition of the province, represented the humbler classes as ground down by oppressive power, and as having acquired, through the effect of this oppression, a dispirited and dejected tone of mind: being accustomed to a state of oppression, they had become unable to form hopes of a better condition, and had acquired a sort of stupor or apathy which rendered them, to a great degree, indifferent to the future.

Hence, it may be inferred, says that gentleman, that they are a quiet and harmless people. Their mode of living is, indeed, with regard to the intercourse among themselves, an uninterrupted calm. Although the male part are given to drinking, quarrels and fighting are almost unknown among them; and they are so much used to blows and all kinds of ill-treatment from their superiors, that they approach with the greatest respect and submission any who bear upon themselves the least external mark of superiority.

There are grounds for hope that this sad picture may be relieved by the subsequent improvement in the relations between the Turkish government and the Moldavians.

The reader is probably prepared to expect, that though Moldavia forms part of the Turkish dominions, the Moldavians are not Mohammedans They profess the religion of the Greek church, a superstitious and corrupt form of Christianity, professed also by the Russians. Persons who have not received baptism by the rites of the church are not deemed Christians; and frequency of confession and communion, together with the punctual observance of a vast number of fast days during the year, are prescribed with severity: the misguided people believe that an exact adherence to these rites is sufficient to expiate the heaviest crimes, particularly after the confessor's absolution, which is said to be obtainable in most cases by means of a good fee. Preaching, and the perusal of the Holy Scriptures, are almost wholly unattended to; and though we, as Christians, may feel a momentary pleasure on hearing that the Moldavians are not Mohammedans, yet there is but little cause for satisfaction, when we reflect on the gross and mutilated form in which the doctrines of Christianitity are presented to the people.

It is a natural result of those forms of religious teaching which do not appeal to the heart, that superstition should prevail widely. The Moldavians firmly believe in all sorts of witchcraft, in apparitions of the dead, in ghosts, and in miracles performed by the images of saints. In illness, they place an image near them; and when they recover, though it were through the aid of the ablest physician, they attribute the recovery to the efficacy of the image alone. No prayers or thanksgiving are offered up either to the Deity or to the Saviour; but the Virgin, and a large number of saints, are those whose names are invoked whenever spiritual assistance is required.

The towns and sea-ports of Moldavia partake of that mixed and European character resulting from the intercourse between merchants, dealers, &c.; but the villages represent the real character of Moldavian life. The peasants' huts are all built nearly of the same size and style.—The walls are of clay, and the roofs thatched with straw, neither of which is calculated to protect the inmates from the inclemency of bad weather. The ground floors are, however, occupied as long as the weather will permit; and in winter the inmates retire to cells under ground, easily kept warm by means of a little fire made of dried dung and some branches of trees, which, at the same time, serves for cooking their scanty food. Each family, however numerous, sleeps in one of these subterraneous habitations, the beds being formed of coarse woollen druggets.

The principal food of the peasantry consists of a kind of dough called *mamma linga*, made of the flour of Indian wheat, sometimes mixed with milk. The season of Lent is kept by them with rigorous severity; and for the first two or three days after its termination, they sparingly indulge themselves with a little meat; but many of them are too poor to obtain this indulgence, and content themselves, in addition to their ordinary food, with eggs fried in butter.

Their dress bears some resemblance to that of the Dacians in the time of the Romans, and has probably suffered but little change for centuries. Their feet are covered with sandals made of goat skin. They wear a kind of loose pantaloon, which is fastened to the waist by a tight leather belt, and closes from the knee downwards. The upper part of the dress is composed of a tight waistcoat, and a short jacket over it, of coarse cotton stuff; in winter they add a white sheep skin, which is hung over the shoulders in the manner of a hussar's pelisse. The hair is twisted round the back of the head, and covered with a cap, generally of sheep skin. The women are generally clothed from the neck to the ankles, in a long gown of light-coloured thick cotton, made tight at the waist, which they cover, on holiday occasions, with a shorter dress, buttoned from the neck to the waist, and ornamented with one or two rows of beads. Under ordinary circumstances, the poorer classes go barefooted, and use no covering for the head except a handkerchief.

Almost every village has a small church or chapel belonging to it, and one or more priests who act as curates. The ecclesiastics of this order are chosen from amongst the ordinary peasants, from whom they are only distinguished in appearance by a long beard. They lead the same sort of life, and follow the same avocations when not engaged in the exercise of their clerical functions; but they are exempted from the public imposts, and pay nothing more than an annual tribute of fifteen piastres to the metropolitan archbishop. The generality of them can neither read nor write: they learn the formulæ of the service by rote; and if a book is seen in their chapels, it is more for ornament then use.

Perhaps the most extraordinary feature in the structure of society in Moldavia is the vast number of gypsies residing there. Their bodily constitution is strong and they are so hardened from constant exposure to all the rigours of the weather, that they appear fit for any labour or fatigue; but their natural aversion to a life of industry is in general so great, that they prefer all the miseries of indigence to the enjoyment of comforts that are to be reaped by persevering exertion.

Both men and women are rather finely formed, but are exceedingly dirty in their habits and appearance. They acknowledge no particular religion, nor do they think of following the precepts of any, unless compelled, nor is there any form of matrimonial tie between the sexes.

The relation in which they stand to the remainder of the inhabitants is a sort of mitigated slavery, the government and the nobles claiming property in them. This slavery, however, so far as the government is concerned, is nothing more than a pledge not to leave the province, and the payment of a small annual tribute. Their time they dispose of as they please, strolling about the country, and pitching their tents near the towns and high roads. Their chief occupation, in this vagrant life, consists in making common iron tools, baskets, and other cheap articles. But their industry and gain are confined to what is absolutely necessary for procuring them the means of subsistence. They possess a natural facility and quickness in acquiring the knowledge of arts; the number of persons, however, who devote themselves to any is small. Musical performance seems to be that to which they give the preference: they frequently attend the wine-houses and taverns, and are sometimes called to the houses of the nobles, when a concert is to

be given. When any public works are to be constructed, the government gypsies who are acquainted with masonry are called in to assist as labourers, receiving food, but no wages, except that a small deduction is made from their annual tribute.

Those gypsies who are deemed the property of the nobles are chiefly employed either as household servants, or as vineyard labourers. As they are not considered as free servants, no wages are given to them; but the filthy and disorderly habits in which they indulge, greatly diminish the supposed advantage of having servants at so economical a rate. Instruments of punishment are kept in the houses, by means of which the gypsies are corrected when in fault, which is very frequently;—in fact, slavery, in all its forms, brings retribution with it, in some way or other.

We have in the present paper confined our attention principally to the humbler classes of Moldavians. In another article, on Wallachia and the Wallachians, we shall give a brief account of the upper classes of society in the two provinces, which are contiguous, and very much resemble each other.

HAVE HOPE.

THE vernal wind that whispers o'er the seas
From sunny climes, and plays among the trees,
Saith, with the gentle music of its breeze,
Have hope.

The rose, that wept its withered flowers' fall,
When rain and storm had forced its funeral,
Bids its young bud say unto me and all,
Have hope.

The desert sands, so wildly, sternly bare,
Where eye and heart sink 'neath the torrid glare,
Hath yet a fountain cool to murmur there,
Have hope.

The tide that ebbing leaves the native shore,
And backward rolls as if for evermore,
Saith, as it flows where it had flowed before,
Have hope.

The night, when darkness is around the earth,
And Nature seems to feel the cheerless dearth,
Saith, with its starlight and the fair moon's birth,
Have hope.

The dream, when guardian angels watch our sleep,
And o'er the tranquil soul fresh visions creep,
Whispers, in tender accents, soft and deep,
Have hope.

The merry morn, when in its purple car,
It leaps the brightening heaven's eastern bar,
Waves on its beaming banner floating far,
Have hope!

[R.H.P., in the *Dublin University Magazine.*]

THE CHILD.—A child is a man in a small letter, yet the best copy of Adam before he tasted of the apple; and he is happy, whose small practice in the world can only write his character. He is Nature's fresh picture newly drawn in oil, which time and much handling dims and defaces. His soul is yet a white paper unscribbled with observations of the world, wherewith at length it becomes a blurred note-book. He is purely happy, because he knows no evil, nor hath made means by sin to be acquainted with misery. He arrives not at the mischief of being wise, nor endures evils to come by foreseeing them. He kisses and loves all, and, when the smart of the rod is past, smiles on his beater. Nature and his parents alike dandle him, and entice him on with a bait of sugar to a draught of wormwood. He plays yet, like a young apprentice the first day, and is not come to his task of melancholy. All the language he speaks yet is tears, and they serve him well enough to express his necessity. His hardest labour is his tongue, as if he were loth to use so deceitful an organ; and he is best company with it when he can prattle. We laugh at his foolish sports, but his game is our earnest, and his drums, rattles, and hobby-horses, but the emblems and mocking of men's business.

RURAL SPORTS FOR THE MONTHS.

APRIL.

THE stag, too, singled from the herd, where long
He ranged the branching monarch of the shades,
Before the tempest drives. At first, in speed
He, sprightly, puts his faith; and, roused by fear,
Gives all his swift aërial soul to flight.
Against the breeze he darts, that way the more
To leave the lessening murderous crew behind.
Deception short! though fleeter than the winds
He bursts the thickets, glances through the glades,
And plunges deep into the wildest wood.
If slow, yet sure, adhesive to the track,
Hot-steaming, up behind him come again
The inhuman rout, and from the shady depth
Expel him, circling through his every shift.
He sweeps the forest oft; and sobbing sees
The glades, mild opening to the golden day,
Where in kind contest with his butting friends
He wont to struggle, or his loves enjoy.
Oft in the full descending flood he tries
To lose the scent, and lave his burning sides;
Oft seeks the herd: the watchful herd, alarmed,
With selfish care avoid a brother's woe.
What shall he do? His once so vivid nerves,
So full of buoyant spirit, now no more
Inspire the course; but fainting breathless toil,
Sick, seizes on his heart: he stands at bay,
And puts his last weak refuge in despair.
The big round tears run down his dappled face;
He groans in anguish, while the growling pack,
Blood-happy, hang at his fair jutting chest.
And mark his beauteous chequered sides with gore.

THOMSON.

IN ancient times, when this country was clothed with extensive forests, the shooting of *deer* formed the occupation of kings, feudal lords, and their vassals, and seems to have constituted their chief amusement. The number of these animals was at that period immense, for we have it on the authority of Leslie, that from five hundred to a thousand were sometimes slain at one general hunting-match, at the termination of which a grand venison feast was prepared for the assembled hunters. The chase of the stag was also popular among the ladies of Britain, who held their hunting-parties independently of the gentlemen. An illuminated manuscript of the early part of the fourteenth century represents one of these female hunts, where one of the ladies is cheering on her dog with the sound of the horn, while another, with a bow in her hand, has just taken sure aim at the stag, and has planted an arrow between his antlers. We may here mention an opinion, entertained by some writers, that it was in the pursuit of the deer man first was led to the invention of the bow.

The hunting of deer was a much more exciting sport in former times than it is at the present day: it even assumed somewhat of a martial character, and was attended with a degree of perilous hazard that rendered it especially attractive to the bold sportsmen of that age. "When the stag turned to bay," says Sir Walter Scott, "the ancient hunter had the perilous task of going in upon, and killing or disabling, the desperate animal. The task was dangerous, and to be adventured upon wisely and warily, either by getting behind the stag while he was gazing on the hounds, or by watching an opportunity to gallop roundly in upon him, and kill him with the sword."

Few persons are unacquainted with the famous old ballad of Chevy Chase, and still fewer perhaps are ignorant of the story of Robin Hood and his band in Sherwood Forest. In these, and many more of the ancient ballads and romances, whether true or fictitious, the pursuit of deer is a favourite theme, and the personal prowess of those who excelled in it a fruitful source of admiration. In the days of chivalry it often happened that the hero most renowned for deeds of arms was also celebrated for his skill and courage in the chase. Thus Gaston de Foix was the mightiest hunter of his day, and wrote a book on hunting, worthy of note for the accuracy of its details. This celebrated duke is said to have kept sixteen hundred hounds.

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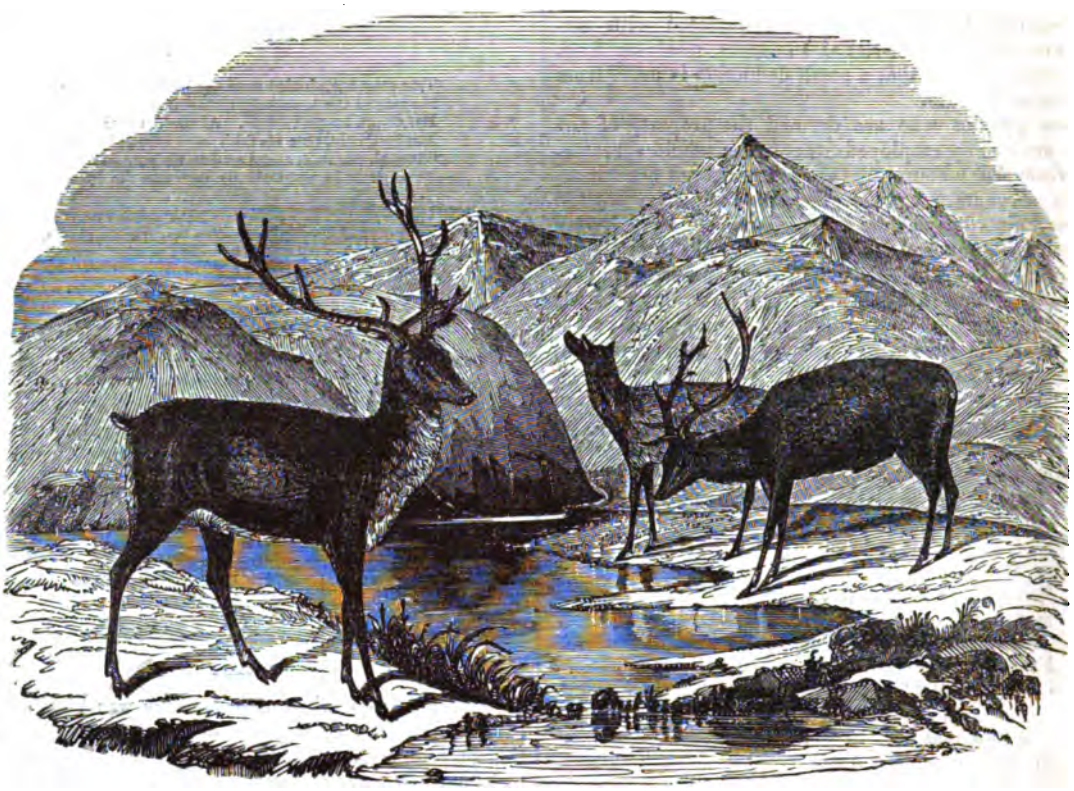

RED DEER.

Scotland and the border countries seem to have been early celebrated for their great huntings; and in the early history of that country, as well as of our own, the chase was a matter of serious importance, as supplying the wants of the inhabitants in food and clothing. Even as late as the time of Henry the Eighth, the Highland huntsman found most of his wants supplied by the deer which he killed. A Highlander, in explaining the term "Rough-footed Scots," addressed the king as follows:—"We go a-hunting, and after we have slain red deer, we flay off the skin by-and-by, and setting of our bare foot on the inside thereof, for want of cunning shoemakers, by your grace's pardon, we play the coblers, compassing and measuring so much thereof as shall reach up to our ankles, pricking the upper part thereof with holes, that the water may repass where it enters, and stretching it up with a thong of the same above our said ankles. So, and please your noble grace, we make our shoes. Therefore, we using such manner of shoes, the rough hairy side outwards, in your grace's dominions of England, we be called 'Rough-footed Scots.'"

The Anglo-Saxons and the Normans hunted the deer with bows and arrows, spears, and nets, as well as with dogs. To the king and his favourites, among the latter people, was reserved the exclusive right of hunting wild animals, but especially the deer, for the propagation of which large tracts of land were unjustly appropriated, and flourishing villages laid waste; while, to protect the deer within these inclosures, heavy fines were exacted, and severe punishments inflicted. These laws led to much crime and misery, and were found, notwithstanding their severity, wholly inadequate to prevent the practice of deer-stealing.

Owing to the progress of agricultural improvement in Great Britain, the quantity of deer is exceedingly diminished. During the last century numerous forests were inclosed, which were formerly well-stocked with red-deer, fallow-deer, and roe-bucks. Windsor Forest, which extended over seventeen parishes, and in many districts was full of deer, was disafforested in 1814, part of it being allotted to the crown for a park, and other parts given in compensation for rights of pasture, &c., to the several parishes

The modern practice of stag-hunting may be considered under two heads, *i. e.*, the hunting of the *wild stag*, as it existed until late years in England, and still exists in Scotland and Ireland, and the hunting of the *carted stag*, so called because he is taken to the appointed spot in a cart. The latter is the method of hunting the stag practised in England at the present day; and, notwithstanding the grandeur and splendid accompaniments which occasionally invest it with attractions, it is regarded by many sportsmen with supreme contempt, as offering little variety or excitement, and being unworthy the manly character of an Englishman. Such, indeed, it appears to be; for the stag, previously nourished up, and fostered in parks with the best food, is, when considered in proper condition for the chase, conveyed, as we have said, to the place appointed, turned out to the sound of the huntsman's horn, allowed an interval of time, called law, and then vigorously pursued by huntsmen and hounds. The distance passed over in the pursuit of the deer is often greater than that traversed by the fox-hunter; but the carted stag, having been often hunted before, (for in this kind of hunting the death of the animal is not sought, he being preserved for future miseries,) generally follows the same track, traverses the same lanes and fields, and laves in the same stream. In the regular stag-hunts a change of deer is often made, to avoid this sameness of procedure. The chief recommendation of this sport appears to be that it can be enjoyed when no other chase of consequence can be pursued. We have not space to notice the hunting of fallow-deer, which, whether the animal be male or female, is in common language called *buck-hunting* We therefore proceed to the natural history of the stag, as we gain it from Cuvier and the best authorities.

The genus to which the stag belongs (*cervus*) consists of ruminant mammalia, the males of which have solid horns, or, more properly speaking, antlers, composed entirely of bone, without any sheathing of horny matter, which are likewise deciduous, and annually reproduced.

The animals of this genus are in general remarkable for the elegance of their forms, the lightness of their proportions, and the velocity of their movements. The legs are slender and firm, the body round and compact, the neck long, and head well-shaped. Their look is meek, yet confidant, wild, yet curious; the colours of their coat, clean, brilliant, and agreeable. They belong rather to wild than to cultivated nature; for although some of the species are comparatively tame, and one of them, the rein-deer, of Northern Europe, in a state of entire domestication, yet generally speaking they fade away before the progress of cultivation, and become diminished in numbers, as the seclusion they love is broken in upon.

The stag (*cervus elaphus*), also known as the hart and red-deer is the deer *par excellence* of all our writers on the chase, and of all the histories of bold foresters of former days. This animal is by much the largest of European deer, and bears horns with a round beam slightly bent inwards at the summits, three branches pointing to the front, and the snags of the crown issuing from a common centre. The adults, male and female, in the summer, have the back, flanks, and outside of the thighs of a reddish-brown colour, with a blackish line running along the spine, marked on each side with fulvous spots. The colour deepens with age, and changes with the seasons. There are breeds common in the German woods which are of a very deep colour, nearly approaching to black. The hair of the stag is remarkably brittle, and holds to the skin only by a small pellicle; his eyes have an elongated pupil, and his muzzle is very broad, the tongue is soft, and ears middle-sized and pointed. In addition to the possession of horns, the stag differs from the hind in the long bristly hair of his throat, and in the canine teeth in the upper jaw. The young fawns are extremely beautiful, and of a colour that is very pleasing to the eye. They are of a rich yellowish brown, dappled with white spots, and from them a peculiar shade of colour, intermediate between brown and yellow, receives its name. At first, the young of the stag, whether male or female, are called *calves:* after six months the bossets or protuberances of the horns become visible in the young males, which gradually develop two simple cylindrical knobs. During the second year the horns assume the figure of dags, or spikes, and the animal is then named a *brocket.* The third year his new horns throw out two or three tynes, or snags, when he is termed a *spayad.* The crown, or surroyal, appears on the summit in the fourth year, and then he is a *staggard.* The fifth year he becomes a stag, in the sixth a *hart,* and so remains the rest of his life. The female likewise passes through a succession of changes but they are less important, and, moreover, regular sportsmen never hunt the female deer. In the first year the female is called a *calf,* in the second a *brocket's sister,* in the third, and ever after, a *hind.*

The hind produces but one fawn or calf in the year; and this takes place in May, or the beginning of June. She seeks retirement and concealment during the summer months, and attends to her calf with truly maternal solicitude, exposing herself to the pursuit of dogs, when necessary, in order to draw them away from her young. At the same time the stags are in seclusion in other pastures, being comparatively defenceless while shedding their horns during the growth of the new ones. Stags *mew* or shed their horns in the early part of the spring, and this is technically called "losing their attire." It is not until the month of August that the new antlers are completed, when the animal rubs off the skin or velvet which covers them against the stems of trees.

Furious battles between harts of the same age are not uncommon during autumn; they run at each other with the heads low, and with such violence that sometimes the horns get entangled so as to become inextricable, and the two are held together till they die. Even after death, the skulls have remained locked together, without the possibility of being severed; a circumstance of not unfrequent occurrence among rein-deer.

It was the ancient belief that the stag was remarkable for longevity, but later observers have reckoned its age as seldom exceeding twenty years. This animal is found more or less throughout Europe, where there is cover adapted for it, except in the extreme north, or in very hot places near the sea. It is also met with in Western Asia, in some of the mountainous islands in the Mediterranean, and on the slopes of the mountains of Atlas, in Northern Africa, where it is supposed it was imported by the Romans. In that part of the world, however, it is considerably degenerated. The size is smaller, the colour lighter, and the antlers terminate in forks, instead of the numerous snags they display in colder climates.

The vast number of stags' horns found in the fossil state must not lead us to the error of supposing that there has been an equal number of stags; for supposing a stag to complete his twentieth year, he furnishes fifteen sets of horns; and, making allowance for casualties, perhaps we may conclude there are ten times as many sets of horns as there have been stags. Nevertheless, the numbers of deer in this kingdom, and throughout Europe, must have been very great in former days. These noble animals are now, as we have already intimated, few in number in England; but the case is different in the mountainous parts of Scotland, especially in the central Grampians, between Athol on the south, and Badenoch and Strathspey. The forest of Athol is one of the largest set apart for red-deer, and forms a noble and extensive demesne, as will be seen from the following modern description:—

The eastern part of the Forest of Athol, or, more strictly speaking, the Forest of Minigag, contains some of the loftiest mountains in Scotland, and it gives rise to various branches of the rivers Dee and Don, towards the eastern side, of the Spey towards the north, and of the Tay, more especially the Bruar and the Tilt, towards the south. There are extensive natural forests of pine, in the upper glens and valleys of the eastern rivers, but the deer are not quite so abundant there as they are in the south, where the exposure is warmer, and the pasture better. Glen Tilt and Glen Bruar, especially the former, are the principal winterings; but the deer, altogether, have not less than a hundred thousand English acres of hill to range over. The Duke of Athol has greatly benefited this vast tract by the extent of his tree planting. The number of deer, old and young, is not fewer than seven or eight thousand; and the great hunts, or rather slaughters, most frequently take place in Glen Tilt, though the more laborious occupation of deer-stalking is pursued in other places. On the great hunts, they are driven by a circuit of people, who bring them to a pass or narrow where the marksmen are posted, so that they can select and make sure of their victims. This is not a very manly sport, but it is very efficient "pot" hunting; and the nature of the ground renders it impossible to adopt any more sportsman-like mode. It is understood that, from the care bestowed upon them by the proprietors, red deer are becoming more numerous on those mountains; and though the hill is quite open, and the keepers are but few, there is comparatively little poaching; and, indeed, it is rendered unnecessary, because the deer are always straying so far out upon the spurs of the hills, that any one who is so inclined may occasionally have a shot; and to attempt shooting deer on the open Grampians, as a matter of profit, is nearly out of the question.

Whoever shall review his life, will generally find that the whole tenor of his conduct has been terminated by some accident of no apparent moment, or by a combination of inconsiderable circumstances, acting when his imagination was unoccupied, and his judgment unsettled; and that his principles and actions have taken their colour from some secret infusion, mingled without design in the current of his ideas. The desires that predominate in our hearts are instilled by imperceptible communications, at the time we look upon the various scenes of the world, and the different employments of men, with the neutrality of inexperience, and we come forth from the nursery of the school, invariably destined to the pursuit of great acquisitions or petty accomplishments.—Dr. Johnson.

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AMICABLE CEREMONIES.

FRIENDLY SALUTATIONS—CEREMONIES OF RESPECT—KISSING HANDS.

ALL the ceremonies which are used in different countries between individuals, and which are of an amicable character, may be reduced to two sorts,—salutations, and reverences,—both of which are usually accompanied by touching some part of the body; but whether this be done, or any other sort of ceremony be practised, matters not: every nation thinks that it alone uses the most reasonable customs of this nature; but all are, perhaps, equally simple; and are certainly not ridiculous, merely because they are strange.

We shall first speak of the modes of *salutation*, which are evidently so much influenced by climate, situation, and the habits of a people; though they rise originally from respect, humility, fear, and esteem, which are expressed much in a similar manner, being the natural consequences of the organization of the body.

As nations fall off from their ancient simplicity, the meaning of salutations becomes less ostensible; so that the external acts often become empty civilities, and imply nothing; which, however, must not be omitted, lest intentional affront may seem to be conveyed by the neglect.

With primitive nations, or in the primitive stages of society, the affectionate touching of the person who is saluted, is an expression of tenderness and regard; as we shall see illustrated by the following examples; and, indeed, the general justness of the remarks which we have already made, will be vindicated as we proceed.

The Greenlanders laugh when they see an European uncover his head, and bend his body before his superior:—the climate would naturally deter the natives from adopting such a form.

Some of the islanders in the Eastern seas take the hand or foot of him they salute, and gently rub their face with it.

The Laplanders rub their noses up against the persons whom they salute.

At New Guinea, in the Eastern seas, they place on the heads of those whom they salute, the leaves of such trees as are symbols of friendship and peace.

Houtman, a Dutch navigator at the end of the sixteenth century, tells us that they saluted him in a very grotesque manner, on one of the islands of the Eastern Archipelago. They raised his left foot, which they passed gently over the right leg, and thence over his face.

The inhabitants of the Philippine Islands bend the body very low, place their hands on their cheeks, and raise at the same time one foot in the air with their knee bent.

An Ethiopian takes the robe of another, and ties it about his own waist so that he leaves his friend half naked.

Sometimes persons more or less undress themselves before friends, in token of humility. The Japanese, when they salute, only take off a slipper: the people of Aracan, near the mouths of the Ganges, take off their sandals in the street, and their stockings in the house.

When they wish to salute each other in a respectful way, in the Japan islands, the person so saluting bends himself down to the earth, then rises and turns his back upon his friend; which latter proceeding is designed to intimate that the person so turning away is unworthy to look upon the other.

Negroes of distinction in the interior of Africa salute each other by snapping the middle finger three times.

Athenæus, who died at the end of the second century after Christ, tells us that the inhabitants of Carinena, to show a peculiar mark of esteem, would let blood and present it as a beverage to their friends.

The Franks would tear the hair from their heads, and present it to those whom they saluted: the slave would cut his hair and offer it to his master.

In Otaheite, an island of the Pacific Ocean they rub their noses together by way of salutation.

The Dutch, who are considered as great eaters, have a morning salutation common amongst all ranks,—"*Smaakelyk eeten.*" May you eat a hearty dinner. Another is, "*Hoe vaart awe?*" How do you sail?—adopted, no doubt, in the early periods of the state, when they were all navigators and fishermen.

The usual salutation at Cairo is,—"How do you sweat?"—a dry hot skin being a sure indication of a destructive ephemeral fever.

The Spaniard says,—"*Como esta?*" How do you stand: while the Frenchman addresses his friend with "*Comment vous portez-vous?*" How do you carry yourself? It has been observed that the former phrase seems to imply a proud, steady and solemn gait, such as is peculiar to the Spaniard; while the latter is expressive of the gay motion and incessant action of the Frenchman.

The common salutation in the southern provinces of China, amongst the lower orders, is—"Have you eaten your rice?"

The Chinese are very affected in their personal civilities. They even calculate the number of their reverences. The men move their hands in an affectionate manner, while they are joined together on the breast, and bow their heads a little. If they respect a person, they raise their hands joined, and then lower them to the earth, in bending the body. If two persons meet after a long separation, they both fall on their knees, and bend their faces to the earth, repeating the ceremony two or three times.

If a Chinese be asked how he finds himself in health, he answers, "Very well; thanks to your abundant felicity." If one would tell another that he looks well, he says, "Prosperity is painted on your face;" or "Your air announces your happiness."

If one receive a service from another, he says, "My thanks shall be immortal." One who is praised says to the other, "How shall I dare to persuade myself of what you say of me?" When a guest departs they say, "We have not treated you with sufficient distinction."

All such answers are prescribed by the Chinese ritual, or the Academy of compliments. By this are determined, the number of bows; the expressions to be employed; the genuflexions, and the inclinations which are to be made, to the right or left hand; the salutations of the master before the chair where the stranger is to be seated, for he salutes it most profoundly, and wipes the dust away with the skirts of his robe: all these and other things are noticed, even to the silent gestures by which a person is entreated to enter the house. The lower classes of people are equally nice in these punctilios; and ambassadors pass forty days in practising them, before they are enabled to appear at court. This people have a *tribunal* of ceremonies, which often issues very odd decrees, to which the Chinese implicitly submit.

Marks of honour are frequently arbitrary:—to be seated is with us a mark of repose and familiarity; and to stand up shows respect. There are countries, however, in which princes will only be addressed by persons who are seated; and it is considered as a favour to be permitted to stand in their presence.

The use of "Your humble servant," came first from France into England on the marriage of Queen Henrietta Maria, daughter of Henry IV. of France, to Charles the First, when Prince of Wales. The usual salutation before that time was "God keep you!" and, among the vulgar, "How dost do?" with a thump on the shoulder.

To bite the ear was, anciently, an expression of endearment; and it is still so far retained by the French, that to pull a man gently by the ear is the most sure token of good will. The French, likewise salute each other thus:—The gentlemen, and others of the male sex, lay hands on the shoulders, and touch the sides of each other's cheek; but, on being introduced to a lady, they say to

her father, brother, or friend, "*Permettez-moi*," and salute each of her cheeks.

As one of the most remarkable methods of doing *reverence* consists in the custom of kissing hands, we propose to furnish a general account of it from the earliest times, remarking, by the way, that this custom is not only very ancient, and nearly universal, but it has been practised both in religion and by society.

From the remotest times men saluted the sun, moon, and stars, by kissing the hand. To this sort of idolatry Job assures us that he was not addicted: see xxxi. 27. This patriarch is considered to have lived about 2130 years B.C.

Lucian, who lived about 150 years after Christ, says that the poor, who could not afford to offer up sacrifices to the gods, adored them by the simpler compliment of kissing their hands. He tells us that Demosthenes, when taken off as a prisoner by the soldiers of Antipater, asked leave to enter a temple. When he had entered he touched his mouth with his hands, which the guards took for an act of religion,—kissing hands to the god. He did it, however, more securely to swallow the poison which he had prepared for such an occasion.

Among the Romans persons were treated as atheists who would not kiss their hands when they entered a temple.

We are told that the earliest Christian bishops gave their hands to be kissed by the ministers who served at the altar; but that the custom declined with paganism.

The flatterers and suppliants of ancient times were in the habit of kissing the hands of their patrons, till they obtained the favour which they solicited. In Homer, Priam is represented kissing the hands and embracing the knees of Achilles, while he supplicates for the body of Hector.

This custom prevailed in ancient Rome, but it varied at different times. In the first ages of the Republic it seems to have been only practised by inferiors towards their superiors: equals gave their hands and embraced. In the progress of time even the soldiers refused to show this mark of respect to their generals, and their kissing the hand of Cato, when he was obliged to quit them, was regarded as an extraordinary circumstance, at a period of such refinement. The great respect paid to the tribunes, consuls, and dictators, obliged individuals to behave towards them in a more distant and respectful manner; and, instead of embracing them as heretofore, they considered themselves fortunate if allowed to kiss their hands. Under the emperors, kissing hands became a duty, even for the great themselves: inferior courtiers were obliged to be content to adore the purple, by kneeling, touching the robe of the emperor with the right hand, and carrying it to the mouth. Even this was thought too free, and at length they saluted the emperor at a distance, by kissing their hands, in the same manner as when they adored the gods.

The custom of which we are now speaking is practised in every known country, in respect to sovereigns and superiors, even amongst the negroes and the inhabitants of the New World. Cortez found this custom prevailing at Mexico, where more than a thousand lords saluted him, by touching the earth with their hands, which they afterwards kissed.

Thus, whether the custom of salutation is practised by kissing the hands of others from respect, or by bringing one's own hand to the mouth, it has been of all customs the most universal in point of time or place. In ordinary practice, however, it is now considered to be too gross a familiarity and a meanness to kiss the hands of those with whom we are in habits of intercourse. But in affairs of state and solemnity at court, this practice is still retained, and at an appointment to office, or on a personal introduction to the sovereign, the favoured individual is allowed to have the honour of kissing the royal hand.

GINGERBREAD.

THE manufacture of gingerbread is carried on to a considerable extent in London, both to supply the home demand, and to furnish the requisite quantity for exportation. It forms a distinct, and a lucrative, branch of trade, and the art is attended with less trouble than even the making of ordinary bread.

This article is held in high estimation among our Anglo-Indian brethren, and is exported in large quantities for their use. In hot climates, the natives of Europe suffer from a relaxed state of the lining membrane of the stomach, and therefore stimulating food is highly acceptable and even beneficial to them: thus we find most men that have been long in India, to have acquired the habit of smoking, and of taking highly seasoned food, spices, and other stimulants. The best sort of gingerbread forms to such an agreeable and wholesome article of diet; and it is this finest description of the article, which is so largely exported to India. It is made in London, and formed into cakes about a foot long, six inches wide, and an inch and a half thick: these are packed in boxes, and so transmitted to their place of destination.

The price of the best description of gingerbread is too high to allow of its being very generally consumed in England; and the quality of the inferior sorts is often so bad as to make them not only distasteful, but positively injurious. The *pain d'épice*, or spiced bread of France is generally esteemed in that country; but the taste for gingerbread seems to be at its height in Holland. There it is the business of every family to produce this article in perfection; and it is affirmed that the family recipe for making gingerbread descends as an heirloom from father to son, and is kept a secret beyond the family circle. So far is this taste carried, that, according even to Dutchmen themselves, the success of a person who wishes to ingratiate himself with a family, often depends in no small degree on the quantity and quality of the presents he makes them in gingerbread. Shops are devoted exclusively to the sale of this commodity; and, indeed, throughout the country, we find the article of which our paltry figure and gilt gingerbread is a very distant imitation, in common use and general estimation.

It is a peculiarity in the manufacture of gingerbread that the dough cannot be fermented by means of yeast. Every attempt at this sort has proved unsuccessful, and though there has been occasionally a slight *appearance* of fermentation in the dough, yet when the gingerbread is baked it is as solid, hard, and compact, as a piece of wood.

The ingredients commonly used in making gingerbread are flour, treacle or molasses, butter, common potashes, and alum. When the butter is melted, and the potashes and alum are dissolved in a little warm water, these three ingredients, together with the treacle, are poured among the flour which is to form the body of the bread. The whole is then incorporated by mixture and kneading into a stiff dough. Of these five constituents, the alum could be best dispensed with, as its properties are hurtful, although it is found useful in making the bread lighter and crisper than it would otherwise be, and hastening the whole process, for gingerbread dough has a further peculiarity, in almost invariably requiring to stand over for the space of from three or four to eight or ten days. Experience has shown, likewise, that it may be allowed to stand over for as much as three weeks, rather with advantage than loss. On some occasions, however, and from causes not well understood by the baker, it is fit for the oven at a much earlier period than at others.

Dr. Colquhoun in endeavouring to trace the causes of the peculiarities which attend the process of gingerbread making, tried several experiments, which led to the conclusion that the mutual action of the treacle and potashes on each other, is the source of the gasefying principle in gingerbread. His experiments may be thus

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briefly noticed:—First, a mass of dough was made ready with all the usual ingredients of gingerbread except *butter*. This was allowed to stand the usual time, then baked; and when taken from the oven it proved to be a well-raised gingerbread loaf. It was plain, therefore, that butter had no influence in making it light and porous. Next, several pieces of dough were prepared, having all the usual ingredients except the *carbonate of potash*. One of these pieces was baked immediately, others stood over for intervals of different duration; but in whatever way it was managed, it always came from the oven in a heavy solid mass. The next experiment was made by leaving the *treacle* itself out, and substituting dissolved loaf sugar while the carbonate of potash and all the other ingredients were present. Here again the bread returned from the oven in a heavy mass, without being in the least degree porous or vesicular. From these experiments it seemed clear that the simultaneous presence of the treacle and the carbonate of potash, and their mutual action, must be quite essential to the formation of good elastic gingerbread.

The nature of the action of the treacle and alkaline carbonate, is not very easy to discover; but it is probably due to a certain portion of uncombined acid in treacle, which unites with the alkali of the carbonate, and releases a quantity of carbonic acid gas, thereby rendering the gingerbread light and elastic. Dr. Colquhoun found that carbonate of magnesia and tartaric acid might replace the potashes and alum with great advantage. The quantity of potash which it is necessary to use in the ordinary process, gives a distinct disagreeable alkaline flavour to the bread unless it be well disguised with some aromatic ingredient, and is likely also to prove injurious to persons of delicate constitution. The inconveniences attending the lengthened nature of the process have likewise to be considered, and it will be seen that the saving of time, and other advantages gained by employing the magnesia and tartaric acid, more than counterbalance the trifling additional cost. The recipe as given by Dr. Colquhoun is as follows:—Take a pound of flour, a quarter of an ounce of carbonate of magnesia, and one eighth of an ounce of tartaric acid; mix the flour and magnesia thoroughly first, then dissolve and add the acid: let the butter, treacle, and spices, be added in the usual manner, melting the butter and pouring it with the treacle and acid among the flour and magnesia. The whole must be then incorporated into a mass of dough by kneading, and then set aside for a period varying from half an hour to an hour. It will be then ready for the oven, and should not be delayed on any occasion longer than two or three hours before it is baked. When taken from the oven it will prove a light, pleasant, spongy bread, with no ingredient in it that can prove injurious to the most delicate constitution.

The recipe for an extremely agreeable gingerbread, to be made in the form of thin "parliament cakes," is as follows:—Of flour take one pound, of treacle half a pound, of raw sugar a quarter of a pound, of butter two ounces, of nutmeg one ounce, of carbonate of magnesia a quarter of an ounce, of tartaric acid, of cinnamon, and of ginger, *each* one eighth of an ounce.

To produce very light gingerbread is a desirable thing, and this result is now easily obtained by the gingerbread-bakers, by secretly using *sesqui-carbonate of ammonia*, or common smelling salts, instead of the magnesia and tartaric acid, or the potashes abovementioned. This salt is entirely dissipated by the heat in baking, and leaves no taste. The carbonic acid gas, and the ammoniacal gas of which the salt is composed, in forcing their way out, expand and perforate the most tenacious dough, and give lightness to the richest and heaviest materials. The proportion of sesqui-carbonate of ammonia to be used in making gingerbread, is half an ounce to every three pounds of materials, including flour, treacle, spices, butter, &c.

The plainest kind of thin gingerbread for children may be thus made. Fine flour, two pounds and a quarter; treacle, ten ounces; finely sifted ginger, an ounce and a half; carraway seeds, half an ounce; sesqui-carbonate of ammonia, half an ounce. The whole to be well-mixed and kneaded, then placed in a pan near the fire and covered over during an hour. It is then rolled out into thin cakes with straight lines drawn across them in the direction they are afterwards to be separated. Before they are baked a little white of egg is brushed over the surface, which glazes it and improves the appearance of the gingerbread.

Various recipes might be given, but as these differ little from the above except in the addition of butter, spices, candied orange-peel, eggs, &c., which any one may add, according to taste. We conclude our notice with directions for making French spice-cakes. A pint of treacle is set over the fire and to it are added the following ingredients;—half a pound of good fresh butter; an ounce of powdered ginger; the same of powdered cinnamon; powdered allspice, coriander seeds, and small cardamum seeds, each a quarter of an ounce; candied lemon-peel finely chopped, two ounces; tincture of Vanilla, six drops; when well mixed, let these ingredients boil up once, stirring all the while, then set them aside to cool. When cold, mix in as much flour as will convert them into a stiff paste. Butter a tin baking dish, and lay on it with a spoon portions of the paste of the size required for the nuts or cakes. For these small forms of gingerbread, the sesqui-carbonate of ammonia is seldom used; but if it be preferred, a small proportion may be added to the above ingredients.

EVENING.

'TWAS eve: the sultry heat of noon was gone,
And a soft breeze stole through the murmuring woods;
The moon was rising in her lofty throne,
Undimmed by vapour, unobscured by clouds;
And many a fountain in its grot of stone,
Poured on the thirsty ground its cooling floods,
Or brightly sparkling in the rocky cell,
With ceaseless splash in crystal basin fell.

Sweet was the gale, and sweet the scene around,
Amid each misty dell and palmy grove
There was a general calm—and not a sound
Was heard—as if the peace that reigned above
Had shed its influence there: upon the ground
The nightly dews were rising—in th' alcove
Formed by the spreading branches, no alarm
Of distant footsteps broke the magic charm.

The Pilgrim.

WHAT is that principle of reproduction which belongs to all the vegetable kingdom? How is it that the acorn, buried in the cold ground, comes forth in a form which bears no resemblance to what was buried, and rises with recurring seasons, by the joint ministry of its mother earth, the refreshing rains, the nursing air, and the far-coming light and heat, till its roots, searching out their own fastenings, and its limbs gradually rising and expanding, can resist for ages the ordinary violence of the storm? And has not every vegetable product in some form the germ of reproduction? And by whose care is it that all are preserved, and continued, and fitted for duration each one in its own line of succession, through thousands of years?

Can he, who sees no divinity in the flower which he crushes beneath his foot, make, by his own power, the simplest product of the vegetable race? Can he, unaided by the operation of the natural world, furnish himself with supplies for his craving wants for a single day? If the commands of the Deity, given in the very creation itself, could be disobeyed by the teeming earth, how long would the mortal frame of ungrateful and thoughtless man be saved from mingling with its kindred dust?—S.

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THE

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SOME ACCOUNT OF COINS, ANCIENT AND MODERN, *(Concluded.)*

A MAGNIFIED COPY OF THE CROWN, OR TRIAL-PIECE, OF THOMAS SIMON, PRESENTED TO CHARLES II.

SECTION III.

MODERN COINS—FOREIGN COINS—ANGLO-GALLIC COINS.

MODERN coins and medals are, as we before remarked, those which reckon from about the ninth century. In these later ages of the world the distinction between coins and medals becomes more clear and definite. We must, therefore, consider the subject, first, under the head of *modern coins*, and then under that of *modern medals*.

Until the beginning of the 16th century, when literature began to revive from the mental lethargy of the middle ages, modern coins are so very rude, that curiosity suggests the chief inducement to examine them. Without dates or epochs they scarcely serve one purpose of utility. The portraits on them are likewise very uncouth. But yet, when they furnish monuments, relating to persons or actions, in the glory of which the national vanity is engaged, they become very interesting. Thus, the noble of Edward III., who began to reign A.D. 1327, on which he is represented in a ship asserting the British dominion of the Ocean, would naturally engage our regard and attention, beyond the finest productions of Greece or Rome.

Whatever we may hereafter say respecting the coins of our own or of other countries, will relate to them as disposed in a cabinet: for their commercial value we must refer our readers to other sources. Before entering upon the subject of modern British coins, we shall take a brief survey of the coinage of the other chief countries of the world.

Beginning with the most eastern part of Asia, the coins of Japan first attract notice, as thin plates of gold and silver, large and oval, and stamped with little ornaments and characters. In this country, as in any other where the art of coining is in a rude state, the practice is, to stamp first the obverse, then a reverse; whereas, with us, both obverse and reverse are achieved at once, and with a single blow. The only coins of China are in copper, about the size of a farthing, with a square hole through the middle, in order to their being strung for the convenience of counting or carrying. They are called "cash," and bear an inscription in Chinese characters, expressing the year of the prince's reign, without his name, distinguished as the "*Happy* year," the "*Illustrious* year," and the like. It is said that the emperor Canghi, who died in 1722, had formed a complete cabinet of Chinese coins. The coins of Tartary are rude and generally present only inscriptions; the like may be said of the coins of Thibet, Pegu, and Siam, and of other smaller states in Eastern Asia. It is doubtful whether any Indian coins exist before the time of the Moguls, or the thirteenth century. Old coins have been found near Calcutta, of gold, silver, copper, and tin, all mingled in one base metal. On one side they bear a warrior with a sword, and on the other an Indian female idol. The later coins of India are thick, like the old Egyptian, and in obedience to the Mohammedan precept, bear no representation of a living creature. The English, French, Portuguese, and Dutch, sometimes struck coins in their eastern settlements, with Persian inscriptions on one side and Latin on the other. The portcullis coins of Elizabeth were issued in rivalship of the Spanish king, for the service of the East India Company in their settlements abroad. They are of different sizes from the crown downwards, and are readily distinguished by the portcullis on the reverse. The modern coins of Persia continue on the model which the Arabian caliphs once imposed on them, and bear on both sides inscriptions from the Koran. The Persian copper has, however, the sun and lion, the arms of Persia, on one side. Of the Arabian coins, the older sort are on the obverse mere copies of some Roman coins, while the reverse contains some Arabic inscription: the later coins bear the name and titles of the prince on one side, and a sentence from the Koran on the other. The coins of Turkey are similar, having merely inscriptions on both sides; and the coins of the northern kingdoms of Africa are likewise upon the Mohammedan plan of mere inscriptions.

Passing over the other kingdoms of Africa as little known, and the original empires of America, Mexico, and Peru, where coinage was not practised, we will proceed to the coins of Europe, after having called the reader's attention to the curious fact, that, in many places in Asia, Africa, and America, where *metal* money has been wanting, the natives use *shells*, and different sorts of permanent fruits, as a circulating medium. The shell thus used as money, and esteemed to be valuable, may be reckoned at about the 130th part of an English penny.

After the downfal of the Western Roman Empire in the fifth and sixth centuries, the viceroys of the Byzantine emperors coined copper at Ravenna in Italy, where they held

the vice-regal court; but for gold and silver money, that of the Greek emperors sufficed for Italy. The *Bezant* was a gold coin struck at Constantinople, by the emperors of that city, which was anciently called *Byzantium*. From the ninth to the fourteenth century, it was the chief gold coin in currency throughout Europe. It seems to have passed in England till the time of Edward III., in the first half of the fourteenth century, when the coinage of the English noble drove it out of use. The Constantinopolitan bezant is the coin which we still see in our cabinets in gold, in the form of a dish, and frequently bearing the portrait of our Saviour. Its value was about nine shillings. Camden tells us that, at the court of England, the piece of gold valued at 15*l.*, which the king was anciently accustomed to offer on high festival days, was called a *Bizantine*. After Charlemagne, about the year 780, had made a great revolution in Italy, there were coins of him struck in Rome and Milan. In the next century the modern coins of Italy begin with the silver pennies of various states. The papal coins begin A. D. 772. In the middle ages the chief bishops of England, France, and Italy struck coins as well as the Pope. The coins of Milan begin with Charlemagne; those of Naples in the ninth century. The coinage of Venice begins in the tenth century with silver pennies. Florence surpasses all the cities of Italy in coinage: some silver pieces occur before the twelfth century; but in 1252 the famous gold coins appeared, called *Florins*, from the flower of the lily upon them: they were imitated by the popes, and by France and England; for during the five centuries preceding no gold had been struck in Europe. The florins coined by other states have the same types as the original florins, but different legends. They were said to weigh a dram, to be 24 carats fine, and to be worth 12*s.*, though now their intrinsic value would be much greater, on account of the difference in the value of gold.

The coins of Genoa and Savoy begin in the twelfth century. France had a gold coinage from Clovis in 490 to the year 751 A. D. which belongs properly to the class of ancient coins. The coins of the second race, beginning with King Pepin in 750, and extending to Hugh Capet in 987, commence the modern class: the latter are barbarous; the former are elegant. The third race begins A.D. 987, and extends to the Revolution. Spain vies with France in the elegance of her early series of coins; but the influence of the Mohammedan faith in Spain for several centuries of Moorish domination, presents us with insipid Arabic inscriptions on both sides of the coins. The coinage of Germany begins with Charlemagne; and that of Denmark with Canute the Great, A.D. 1014. The Swedish coinage is said to have begun early in the ninth century, and that of Norway in the middle of the tenth. Of Denmark, Sweden, and Norway, there are also ecclesiastical coins struck by the chief bishops. The coinage of Bohemia and Poland begins with the tenth century, and follows the model of the German. The coins of Russia are none of them more ancient than the thirteenth century. The first Russian coins have rude figures of animals on one side, and a man standing with a bow or spear on the other. Some have St. George and the dragon, and various other types: such are the *Kopeks*, or silver pennies. The *Rouble*, or dollar, and its half, began under Ivan, or John, in 1547. In 1230, the knights of the Teutonic order having conquered the pagan inhabitants of Prussia, coined silver pennies on the German plan at Culm. The coins of Brandenburg and Poland are the later coins of Prussia.

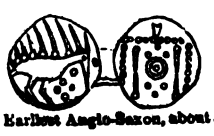
There was also money struck in France by English princes, while that country was wholly, or partially, under English domination. Of Anglo-Gallic silver coins we have deniers of Eleanor, wife of Henry II., as duchess of Aquitaine, with deniers and half-deniers of Henry II., and pennies and half-pennies of Aquitaine, and pence of Poitou and Rouen of Richard I. Of John and Henry III. there is no Anglo-French money; but there is a lion of billon of Edward I., coined during the lifetime of his father, after he had received Gascony; and abundant series of silver and billon coins of Edward III., of Edward the Black Prince, of Richard II., Henry IV., V., and VI. The denominations of the silver were the hardi, the double hardi, groat, half-groat, penny, and half-penny. To this class also belong the Calais groats and half-groats of the sovereigns of England from Edward III. to Henry VI., and the Tournay groats of Henry VIII. Edward III. was the first of the English princes who struck gold money in France: the denominations were guiennois, leopard, chaise, and mouton; to these Edward the Black Prince added the hardi of gold and the pavilion, and Henry V. salutes and half-salutes. Henry VI. coined salutes, angelots, and francs in gold. The doubtful specimen of silver coin supposed to have been struck by Margaret of Burgundy for Perkin Warbeck, is commonly referred to the Anglo-Gallic series.

SECTION IV.

ANGLO-SAXON COINS—ECCLESIASTICAL COINS—NORMAN COINS—PETER'S PENCE—COINS USED IN ENGLAND TILL THE REIGN OF CHARLES II.—COINS ONCE USED FOR LEGAL FEES—COINAGE OF CHARLES II.—BAD STATE OF THE COINAGE AT THE REVOLUTION—THOMAS SIMON—INTRODUCTION OF THE MILL AND SCREW—COPPER MONEY—ALLOY OF METALS—SCOTCH AND IRISH MONEY.

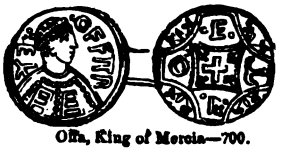
We shall now give a brief notice of the coins of Britain. The Heptarchic coins are of two sorts; the silver *sceatta*, or penny, and the copper or *billon styca*, the latter being known only in Northumbria, and being a very small piece worth about a mite: the word "billon" implies copper *washed with silver*. The silver penny may be regarded as the general Heptarchic coin. The sceattas were struck in Kent and the other states of the Heptarchy, from A. D. 500 to 700. No Heptarchic pennies of universal current occur, however, till after the year 700; but sceattas are found with the name of Ethelbert I., king of Kent,

Styca of Ethelred of Northumberland—806.

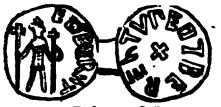


Earliest Anglo-Saxon, about 500

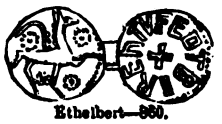
Ethelbert of Kent—802



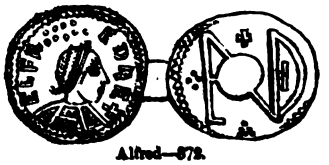
Offa, King of Mercia—700.



Egbert—819.



Ethelbert—860.



Alfred—872.

Ethelstan—924.

Canute—1017.

Harold—1035.

Edward the Confessor—1042.

A. D. 560—616; and of other kings of Kent. The regular Heptarchic pennies are, therefore, almost all of the eighth century, or from 700 till 852, when Egbert terminated the seven kingdoms. The coins of the chief monarchs then present almost a complete series from Egbert, A.D. 852 to Edgar, A. D. 959. Most of them bear rude portraits and sometimes curious inscriptions. Of Ethelbald, A. D. 857, and Edmund Ironside, A. D. 1016, there are no coins. Belonging to those times, appear coins of the archbishops of Canterbury; and afterwards we find pennies bearing the private mark of the bishops of Durham, and coins issuing from the archiepiscopal mint at York. The archbishops seem to have retained this privilege until the reign of Henry VIII.; for it was one of the charges against Wolsey, that he had put the cardinal's hat upon the groats and half-

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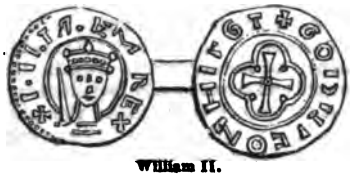
groats, issued from the mint at York, of which place he was prelate. On the reverse of all these coins, which has frequently the name of the city where they were coined, there is sometimes a cross so deeply impressed, that the coin might be easily parted, and broken into halves, which, so broken, were *half-pence;* or into four parts, or *farthings.*

In regard to the money struck by Cardinal Wolsey, Akerman observes that, "In the year 1529, among other articles exhibited against Cardinal Wolsey, was one charging him with having 'enterprised to join and imprint the Cardinal's hat' upon his 'coin of groats.' Ruding considers that the fault here laid to the Cardinal's charge was not merely the placing of the hat upon his money, but the striking of coins of a larger denomination and value than the penny, "he being the only prelate who struck groats and half-groats; but this conjecture is groundless, as there are half-groats of the other prelates with their initials. It was clearly the *hat* which gave the offence."

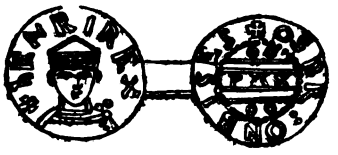
With the Anglo-Saxons gold seems to have passed current by weight; at least, no gold coin of their monarchs has been discovered. They computed by pounds, shillings, pence, and farthings; twelve pence making one shilling, and twenty shillings one pound, as at the present day. But there were two kinds of penny, the greater and the less: of the former five made a shilling, and of the latter, the sceatta, twenty were required. The greater penny always went by the name of *penning.* The Anglo-Saxons derived their knowledge of the art of coining from the Roman ecclesiastics, who had the privilege of coining money equally with the king. It is some sort of proof that the Anglo-Saxons were not so civilized, or accustomed to trade, as the ancient British, who used both gold and silver coins, while the Saxons had silver only.

The Norman conquest in 1066 made no alteration in the English penny, or *anglicus*, which was a coin celebrated all over Europe in the middle ages, and was almost the only money known in the northern kingdoms. In neatness of fabric, and in purity of metal, it is superior even to the Italian and French coins of that period. The series of English pennies extends almost without any failure from Egbert to Victoria. The kings wanting are John and Richard *I.* The coins of William Rufus and of Henry I.



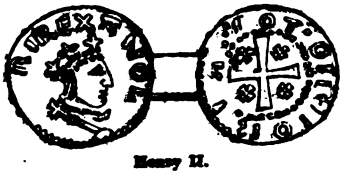
William II.

have some similarity; but of Henry the First's pennies the types are as various as upon those of any monarch of the English series: the reverses bear the name of the mint and the coiner. This, which was the Saxon practice, continued



Henry I.

till the reign of Edward I. Henry II. is said to have had but one type for his coins; but it seems probable that the pennies which are usually thought to belong to the first coinage of King Henry III. are in reality the last coinage of Henry II. at the time he reformed the national money, A. D. 1180.



Henry II.

Besides the principal ecclesiastics, it is said that the chief barons used to strike their own coin: but as none has been found with their marks, it is supposed that this was done only in times of anarchy, and that it was repressed by a powerful sovereign, as an encroachment on the royal prerogative. There are, however, many coins of English bishops, and of St. Peter's pence, bearing STPETR on them. These pence originated with Offa, king of Mercia, engaging to pay the sovereign pontiff a yearly sum for the support of an English college at Rome; and to raise the money, he imposed the tax of one penny on each house possessed of thirty pence. This imposition, afterwards levied on all England, was denominated "Peter's pence."

Half-pennies and farthings, regularly made of silver, were first struck by Edward I., about 1280, for general circulation. After these came the *groat*, so called from the French *gros*, a *large* piece, which was introduced by Edward III. in 1354, and continues in use to this day, under the name of the *fourpenny piece*: that which was issued for circulation in 1836 is of a different type from the ordinary groat. There was formerly a half-groat in circulation. The *testoon*, or shilling, was first coined by Henry VII. in 1503. The appellation of "testoon" originated in the *teste, tête*, or head of the king upon it. The shilling was first, as it would seem, a German appellation, *schelling*; coins of which name had been struck at Hamburgh in 1407. Henry VIII. first made the crowns of silver, which had formerly appeared in gold. In France, they were for a long time the largest gold coins, and were worth 10*s*. They were so called from the crown being once stamped on one side. Edward VI. coined half-crowns, sixpences, and threepences; and Elizabeth put out three-halfpenny and three-farthing pieces.

When coins are found which have more than one head on the obverse, they are most usually *joined*, that is, looking the same way, as on the money of William and Mary; but the coins of Philip and Mary, which were probably struck from treasure brought here by that king, are remarkable for bearing their portraits, except in one instance, facing each other, which circumstance called forth the following couplet of Hudibras,—

Still am'rous, and fond, and billing,
Like Philip and Mary on a shilling.

Though our space will not allow us to describe fully the coinage, with its changes, in all the different reigns of English history; yet we must not omit to particularise some of the more important coins which, from their value or long use, were well known and esteemed until the seventeenth century. The reader should remember that, from an early period, the circulation of foreign money, of various countries, was not only adopted, but even legalised, in England. This was the case with the bezant, already spoken of; and we proceed to notice a few others.

The *crown of the sun* was a French coin, first struck by Louis XI. of France in 1475. Henry VIII., in the fourteenth year of his reign, by proclamation ordered that crowns of the sun, ducats, and crowns of gold not of the sun, be received in currency; the crowns of the sun not clipped to go at four shillings and four pence sterling. Under Edward VI., in 1549, they were ordered by proclamation to pass for seven shillings, but were reduced to pass for six shillings and four pence, by a subsequent proclamation. They were also at this value in the reign of Queen Mary.

The coin called the *Angel* was not struck in England till the middle of the fifteenth century, it being originally a gold coin of France, where it was first coined, at least by that name, in 1340. In France, where the half and quarter angel were soon used, it was always of fine gold, but not always of the same weight. Angels and half-angels (angelets) are the only gold coins known of Richard III. When first introduced, the angel was valued at 6*s*. 8*d*., and, thus agreeing with the noble, was sometimes called the *noble-angel*. In the course of the reign of Henry VIII. and his successor, the value of the angel was raised to 8*s*. In Queen Mary's time it went for 10*s*., which value it kept till the end of the reign of Charles I. who was the last monarch who coined the angel. The usual device upon the obverse

Gold Angel of Queen Elizabeth.

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of this coin was the figure of the angel St. Michael standing upon the dragon, and piercing him through the mouth with a spear, the upper end of which terminated in a kind of cross. The reverse of the earlier ones had a ship, with a large cross for a mast, with the royal arms in front. The angels of James I. and Charles I. have the mast of the ship with a maintop and no cross. The obverse had the king's titles surrounding the device. There were different legends and inscriptions used in different reigns.

.. The *mark*, and its half, the *noble*, (the latter so called from its material being the finest gold used in coinage,) seem to have been the most general ideal form of money in former ages; the former rating at 13*s.* 4*d.*, and the latter at 6*s.* 8*d.* The noble was published as a substitute for the florins, on account of the inconvenient value of the latter,—6*s.* The obverse of the noble represents the king, Edward III., standing in a vessel, asserting the dominion of the sea. This coin, sometimes called the *rose noble*, together with its divisions, continued the only gold coin till the issue of the angels before described. In Henry the Sixth's time, it was made to pass for 10*s.*, under the new name of *ryal*. Henry VII. issued the double ryal, or sovereign, of 20*s.*, accompanied by the double sovereign. Henry VIII. coined gold crowns and half-crowns of the present value; but his gold was much debased. The rose noble was so termed in consequence of both sides being impaled in an undulating circle resembling the outline of an expanded rose.

The *sovereigns*, called at the accession of James I. *unites*, and sometimes *sceptre-pieces*, were valued at 20*s.*; they were nearly two inches in diameter, being proportionably thin. They were called *sceptre-pieces* from the figure of the king on the obverse sitting on his throne with his sceptre in his hand. The sovereigns were considered to be double ryals, when the ryal was reckoned at 10*s.* Spur-ryals, a gold coin of Elizabeth, form a very handsome sort of money: on

Gold Spur-Ryal of Queen Elizabeth.

the obverse is the queen with her sceptre, sitting in a ship in the sea, and in the centre of the reverse is the star-pointed figure of a spur, whence the name of the coin: these pieces went at 15*s.* There was also a gold coin in use in the fourteenth century called the *chaise* (this is the French word for a chair or seat); but this was an Anglo-Gallic piece of Edward the Black Prince, and does not strictly belong to the English series. It received the name of the "chaise" from the prince's appearing on the obverse seated in a chair of state.

We must not omit to speak of the Louis, or Louis d'or, which was a gold coin in the old system of France, and first struck under Louis XIII., in 1641. It has been considered as a current coin in most parts of the continent, though in England it has been only sold as merchandise, where, at different periods, according to the demand, its price has fluctuated from 18*s.* 6*d.* to 21*s.* sterling. About half a century ago, among other changes brought about by the Revolution, the old reckoning—by deniers, sous, livres, écus (crowns), and louis—was abandoned, and the decimal reckoning was resorted to,—centimes, d'cimes, francs, twenty franc pieces. Upon the return of the Bourbon family into France, the twenty-franc pieces, struck by Louis XVIII. in imitation of the Napoleons, received the name of Louis, or Louis d'or,—a designation which is likewise given occasionally to the like coin struck by King Louis Philippe, but which are more ordinarily called "twenty-franc pieces."

It may now perhaps occur to the reader to perceive whence originated the definite amount of certain legal and other public fees and payments. Every one has heard, for instance, of the attorney's charge of 3*s.* 4*d.*, 6*s.* 8*d.*, 13*s.* 4*d.*, for certain services rendered to the party consulting him; but it requires a little acquaintance with the state of the ancient coinage, to satisfy one's self that he could not well raise or sink his charge above or below the particular item in question. In the days of our forefathers, the labours of the legal functionary were remunerated by the payment of particular coins, according as the service, or the nature of the case, might be. When the lawyer had to receive 3*s.* 4*d.*, his client paid him, in the reign of Henry VI., at the beginning of the fifteenth century, an angelet, or half an angel; the angel being then valued at 6*s.* 8*d.*, though it afterwards rose to 10*s.* and the noble took the place of the angel. It is true that the pieces of money just referred to have no existence at the present day; but, as the foregoing specific charges still exist in, and are authorised by, the practice o. our courts of law, lawyers cannot help making them, and we cannot help hearing about them. It is also a rule or custom to pay a fee of 6*s.* 8*d.* (the angel or noble) to the minister of a parish, on account of an extra-parochial funeral, the origin of which fee we may trace to a similar source.

To particularise further the coins of all these different reigns would not perhaps be very interesting to the general reader. We may, therefore, content ourselves with observing that the coinage was of gold and silver; for, excepting the Saxon *stycas* mentioned before, copper coin continued to be wanting in the English authorised money till the year 1672. Groats, testoons (shillings), crowns, florins, nobles, and marks, were the principal pieces of money in different reigns. Gold, though first coined by Henry III., about 1257, who struck a gold penny, value 20*d.*, was not made current until the reign of Edward III., in 1344, when that prince first coined florins, which were soon succeeded by the nobles, and other coins already spoken of. The last silver farthing was coined in the reign of Edward VI., and the last silver halfpenny in the days of the Commonwealth. We pass on, therefore, to the state of the coinage under Charles II.

In some reigns prior to that of Charles II., the value of silver was to that of gold as 1 to 4: hence, the noble of Edward III., spoken of before, and published at 6*s.* 8*d.*, might be now worth a guinea, on account of the present higher price of gold. The ancient relative value of gold to silver was as 11 to 1: but in the reign of James I. the proportional value of silver had sunk down as 1 to 13¼. Standard silver is now to standard gold, as 1 to 14⅞. The coins which were in use before the present coinage was adopted, soon after the war which terminated in 1815, were, generally speaking, such as were established by Charles II. The thin hammered money of former reigns was, in his time, discarded. The gold and silver money had all along been made thin, because it was necessary to make the inferior pieces, at least, of a certain size, in order that they might be conveniently tangible for use. Thus, the gold penny, before spoken of, was three-fourths of an inch in diameter. The "sovereign," or "broad piece," in use in the reign of James I., and called in the republican condition of the country, the "twenty-shilling piece," gave way in the reign of Charles II., to the guinea, so called from the Guinea gold, out of which it was first struck. This gold was brought from Guinea by the African company. In order to encourage this company to import gold, they were permitted by charter to have the figure of an elephant stamped on these pieces. The guinea was proclaimed in 1663 to pass for 20*s.*; but from its intrinsic superiority over the former gold money, it always fetched 21*s.*, and was styled the "guinea." This popular decision was accordingly afterwards ratified by government. Five guinea pieces, double guineas, half and quarter guineas, were struck at different times; but for obvious reasons, none but the guinea and half-guinea obtained general circulation; as likewise the gold seven-shilling piece.

At the time of the Revolution, in 1688, the silver coin of the country was in a very bad state; so that by the year 1696, the value of the guinea had risen to 30*s.* currency. "Clipping and false coining had for some time been carried on to an alarming extent, and at length roused the attention of Parliament, who appointed a committee to enquire into the abuse. The committee recommended a general re-coinage as a remedy for the evil; when the recommendation was debated in the house and finally adopted. The great recoinage occupied nearly four years, and was completed in 1699. The total amount of silver coined, was

"In the Tower Mint	£5,091,121	7	7
In the Country Mints	1,791,787	12	0
Total	6,882,908	19	7

"The Mint charges amounted to £179,431 6*s.*, and the charges and consequent losses are supposed to have been

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equal to £2,700,000. In our own time the extensive coinages in the royal mint from the year 1816 to 1822, amounted to £7,402,236 11*s.* 6*d.*"—AKERMAN.

In the course of a few years after this re-coinage, the guinea fell to its original value of 21*s.* The old gold coins, the Jacobus or unite (25*s.*), the Carolus, (23*s.*), and the broad piece (21*s.* or 22*s.*), were not called in till the year 1773.

As the coinage existing in our own times is a great improvement upon that of George III., and his predecessors; so, that of Charles II. was an improvement upon the thin hammered money of previous reigns. The improvement in the state of our coins in the seventeenth century, was due to the employment of more skilful artists in this line, and in particular of THOMAS SIMON, the celebrated engraver; of whose famous trial-piece, we have given a representation at the head of this article. This work, a specimen of the silver crown, was performed in order to interest the king in his behalf, and to prove to his majesty Charles II. not only that talent did not lie with foreigners, but that Englishmen deserved to be encouraged both from patriotic motives and for their superior skill. Simon was a native of Yorkshire: when he grew up, his natural abilities recommended him to the notice of Nicholas Briot, engraver of the Mint to Charles I. Briot being ordered to go to Edinburgh, to engrave some dies for medals and coins, in 1633, met with Simon, took him under his care, and taught him. When Sir E. Harley was master of the Mint, he recommended Simon as an engraver. The first public specimen of his talents was the Admiralty seal, engraved in 1636, when the Earl of Northumberland was lord high admiral: it is of exquisite workmanship, the ship being finished with astonishing minuteness. When Briot, who was a Frenchman, returned to his native country, Simon succeeded him as head engraver at the Mint, in 1646. When the civil commotions broke out, Simon incurred the king's displeasure for making for the parliament a copy of the royal seal; but, after the king's death, the parliament took Simon into favour; and throughout the interregnum Simon produced many hundred seals, medals, coins, &c., of various kinds: some of which have rarely been equalled for minuteness of execution. After Cromwell's death, Simon engraved the great seal for Richard Cromwell; and the coronation, judicial, and other seals of Charles II. At length, Rötiers, a Dutchman, in 1662, was appointed to the Mint; and this gave rise to the celebrated trial-piece. The frontispiece, which represents this, is a magnified view of that which is now in the possession of Thomas Hollis. Esq., F.R. and A. SS. Round the edge of this coin is the following petition:—"Thomas Simon most humbly prays your Majesty to compare this his Tryal-Piece with the Dutch, and if more truly drawn and emboss'd, more gracefully order'd, and more accurately engraven, to relieve him." This fine piece of workmanship did not however profit him, except by adding eventually to his fame, and the Rötiers were still continued in employment. It is even said that the Rötiers were called over in 1662, by the directors of the Mint, as Simon's works proceeded too slowly. It is supposed that Simon died of the great plague in 1665; as nothing is known of him after that year, when he engraved a medal for Charles II., commemorating the victories of England over Holland. As engraver to the Mint, Simon received an annual salary of 50*l.* He is deemed by the most competent judges to have been the best engraver of modern times.

We have elsewhere alluded to the thinness of the old money, as resulting from the use of the hammer in coinage. The use of the hammer in fabricating money, being the only method first known, was of easy management and small expence; and hence the vast number of mints in almost every city of England, and the number of *moneyers* whose names appear on early coins, sometimes amounting to more than a hundred, upon those of one prince. The moneyer was the coiner, who in early times put his name on the coin, and often the name of the town. These persons frequently travelled about with the kings, in order to coin money upon emergencies.

A consequence of the thinness of modern coins was their large size in respect of their value; so that no relief could well be given to the impression. We are told that Constantine the Great ordered the Roman coin to be struck thin, and with small relief, in order that the common fraud of covering lead or copper with gold or silver, which we know the thickness of the ancient coin led to, might be prevented. But, in fact, the money became thinner by the decline of the art both before and after the time of Constantine; and it was barbarism, and not prevention of fraud, which caused this alteration.

No improvement was made in the method of coinage, until the power of the screw was applied to it in the French mint in the sixteenth century. The new invention was admitted into the English mint about the year 1561, when it was used together with the hammer, until the latter was wholly laid aside in 1662. The advantage of the new machine, known by the name of *the mill and screw*, over the old mode of striking with a hammer, consists chiefly in the increase of force, which is so great as to raise the impression at one blow. The edges of the hammered money were left in a rude and unfinished state, which exposed them to depredation by clipping. By means of the mill, a *graining* was applied to money, so as to form a regular circle on the outside of the legend, quite to the edge of the coin. The earliest specimens of Elizabeth's milled money exhibit instances of this invention. A legend was now imprinted upon the edges of the larger coins, and a graining technically termed *milling*, was applied to the outer extremity of the smaller; the present double sovereign and crown piece are examples of the former, and all our smaller pieces are specimens of the latter*.

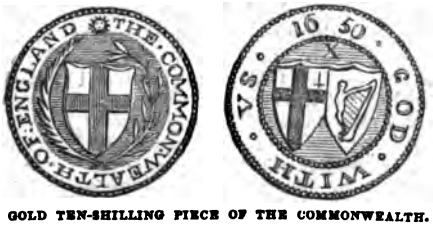
Briot, the French artist before mentioned, was the person who established the use of the mill in this kingdom, by which means the art of coining was carried to such a perfection as it had not before reached. Hence, the works of Simon, Briot's scholar, perhaps excel any of modern times. Under Simon, the old awkward broad-piece begins first to assume the more decent form of the guinea; and the whole coin to become more solid and compact. The coin went on improving during the end of the seventeenth and the beginning of the eighteenth centuries. The artist who ranks next to Simon is Croker, chief engraver at the Mint in the reign of Queen Anne. After his time the chief part of the coinage of the kingdom fell into a bad state, from which it did not wholly emerge, until some years of the present century had passed over our heads.

In former years the coining of money at various local mints was either permitted or connived at by the government of the country. In the reign of Queen Elizabeth no mint was allowed, except in the Tower of London, which practice was continued till the civil wars compelled Charles I. to coin money at most of the principal towns which took up the royal cause: hence the square and rhomboidal *siege-pieces*. It is remarkable that, in all his difficulties, this monarch never debased the coin which he issued; a proceeding, of which so many other more fortunate monarchs have been guilty. Money was afterwards again ordinarily coined at the Tower, till the erection of the present Mint within these few years.

In AKERMAN'S *Numismatic Manual* we read that the Commonwealth struck money during the life-time of the king, (Charles I.) with his name and titles; but that after his death new dies were ordered to be made. The coins issued are distinguished from all others in the English series. The types furnished the cavaliers with subjects for much joke and ribaldry. The double shield on the reverse, was called "the breeches for the rump." In allusion to the legends, God and the commonwealth were said to be on opposite sides. A wag launched the following epigram at them:—

> May their success like to their coin appear,
> Send double crosses for their single cheer.

The witty Fuller says, "I hope hereafter, when the question is asked of our coiners, whose image and superscription is this? It will be returned, The Cæsar's of England!"



GOLD TEN-SHILLING PIECE OF THE COMMONWEALTH.

Silver pennies were still much used till the close of the reign of George I., but they are now not at all common, being principally coined to be given to poor persons on Maundy Thursday, as we have already noticed in our

* For an account of the process of COINING at the Royal Mint, see *Saturday Magazine*, Vol. VIII., pp. 163 and 239.

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description of the "Custom of the Maundy;" see No. 562, p. 133.

For the derivation of the word *cash* some people have referred to a common *copper* coin of China and India, which is so called: others say that the term "cash" is now transferred by usage from the *case* which holds the coin, to the coin itself. According to the latter explanation, the word would be derived from the French, *caisse*, a box, case, or chest; also a merchant's or banker's cash-box, or counter. The term "hard cash" means *coin*, in contradistinction to bills, notes, or paper-money: but a very peculiar sort of "*hard* cash" were "Musket balls, full bore," which were a legal tender in Massachusetts, in 1656, and were current for a farthing a piece, provided no man were compelled to take above twelve at a time of them.

Till the time of Charles II. a regular copper coinage was not used, from a dislike towards copper; this being the metal chiefly used in counterfeiting the gold and silver coins: such counterfeits were termed "black money," in contradistinction to "white money," or good silver coin.

But it appears that there were two kinds of black money,—the counterfeit, and the authorised money of billon: the latter was very much used in France and also in Ireland. The want of a lower, but well tangible sort of money was long felt, and in consequence of the increase of *tradesmen's tokens* (see Vol. XVII., p. 63), the government of Queen Elizabeth had attempted to effect a copper coinage; but the queen being averse, the scheme was given up. King James in 1613 issued royal farthing tokens; but these were not well received. Charles I. issued the like; but at his death counterfeits and tokens increased so much, that in 1672 government took the matter regularly in hand, and issued farthings. Tin farthings were likewise used with a stud of copper in the middle. In 1693 the tin was all called in, and the copper coinage of farthings and half-pence went on improving. For the farthings of Queen Anne, which were chiefly trial-pieces, we refer the reader back to Vol. XVII., p. 76. The present copper coinage has been all executed within the last fifty years.

It does not appear that England has been singular in its long abstinence from a copper coinage. "It is worthy of observation," says Pinkerton, "that while copper money was in Greece of very ancient date, and in Rome two centuries older than silver, yet in almost all the nations of modern Europe it arose a thousand years later than silver."

Thus we see that the established metals for coining in modern times, are gold, silver, and copper; and that all other materials of coinage were regarded in a spurious light. We should, however, except the metal platinum, which the Russians employ in striking some of their money. This fine and valuable metal is extracted from the mines of the Uralian mountains, and has a specific gravity rather exceeding that of gold.

The quantity of alloy for gold, in order to harden the coin, and make it wear well, is *two* carats out of the twenty-four: that is, one-twelfth of the gold money is alloy. The alloy for silver is *three* parts in forty. The for going proportions relate, however, to the English coinage. In France the legal proportions of the different coins are as follow:—silver coins, 9 parts silver, 1 copper; copper money, 4 parts copper, 1 silver; gold coin, 9 parts gold, 1 copper. In the next place, the quantity of gold used in forming a sovereign, is rather below the proportional value of 20*s.*, in order that no inducement may exist to melt down the national coin for the purposes of trade. Hence it is, that an English sovereign, which, by the tabular values of the respective coins, is equal to 24 francs, fetches 25 francs, and sometimes more, at the foreign mints.

The coinage of Scotland did not commence before the twelfth century; there being silver pennies of Alexander I. A.D. 1107. Though the Scottish money was originally the same as that of England in size and value, many causes had brought it so low, that in the seventeenth century, it was only one twelfth part value of corresponding English money; and so it continued till the union of the kingdoms cancelled the Scottish coinage.

In regard to the money of Scotland, it was for the most part fabricated after the fashion of the English. The copper coinage, though more ancient than that of England, was not earlier than the end of the sixteenth century, and seems to have been derived from the French.

By the articles of the Union, which took place at the beginning of the last century, it was appointed that all the coins should be reduced to the English, and the same accounts observed throughout. Till that period, the Scots had, as we have just said, their pounds, shillings, and pence, as in England; but their pound was twenty pence English, and the others were in proportion. Accordingly, their mark—13*s.* 4*d.*, Scottish—was current in England at 13½*d.*; and their noble in proportion. Besides these, they had their Turnorer pence and halfpence; their penny being one-twelfth of that of England, as noticed before; besides base money of achisons, baubees, and placks: the boddle, one sixth of the penny; one fourth of the achison, one-third of the baubee, and one half of the plack.

In Ireland, the coins are as in England; viz. shillings, pence, &c., with this difference, that their shilling is but equal to 11$\frac{1}{13}$*d.* sterling; or a shilling English is equal to 26 halfpence; whence their pound is only 18*s.* 4½*d.* of English money.

The Danes seem to have originated the Irish coinage about A.D. 930. The harp, the present distinguishing mark of Irish money, is not observed till the reign of Henry VIII., when the difference in value between English and Irish coin became apparent, and much base money was thrust upon Ireland. Both Henry VIII. and Queen Elizabeth coined base money, approaching to billon, for the use of this country. In 1601, Ireland obtained a regular copper coinage. In 1635, a mint was established in Dublin by Charles I. Since the abolition of this mint in 1640, in consequence of the Massacre and disturbances in that country, no legal gold or silver coins have been struck with the Irish badge; but copper only. James II. arriving in Ireland from France in 1689, instituted a mint, and issued shillings and half-crowns, struck of all the refuse metal that could be procured; for this purpose some brass guns were used, so that this coinage is generally termed *gun-money*. Pennies and half-pennies of lead, mixed with tin, were issued in 1690; and crowns of gun-metal, of the size of our half-crowns. Upon some occasions in the last century, some private individuals obtained patents for executing the copper coinage for Ireland. In 1722, William Wood obtained from George I. the famous patent which excited such discontent in Ireland. It was for coining halfpence and farthings. The patentee aimed at making a vast profit by the diminished size of the pieces. In this affair Swift distinguished himself in opposing the government. These coins are of very fine copper and workmanship, and have the best portrait of George I. anywhere found. Sir Isaac Newton, then at the head of the Mint, said they were superior to English farthings in everything but size. Those issued in 1737 were coined of just size and weight, with the harp only on the reverse, and are the patterns of those used at the present day. There being now no mint in Ireland, their copper coins are struck in London, and sent over.

In the year 1760, there was a great scarcity of copper coin in Ireland; upon which, a society of Irish gentlemen applied for leave, upon proper conditions, to coin halfpence; which being granted, they appeared with a very bad portrait of George II., and the legend VOCE POPULI. The bust bears a greater resemblance to the Pretender than to George II.; and it is not certain that this fact was not premeditated: it was said that these pieces were issued without any leave being asked or obtained.

The reader will see that our limits will not suffer us to enter into a description of all the various species of money now used in Europe and America, together with an enumeration of the respective values of each piece: for information of this sort, so useful to the mercantile adventurer, we must refer him to treatises on the article MONEY.

SECTION V.

MODERN MEDALS—PAPAL MEDALS—SPANISH AND FRENCH MEDALS—COMPARISON OF ANCIENT AND MODERN MEDALS—ENGLISH MEDALS—CORONATION MEDALS.

In the middle ages MEDALS seem to have been quite unknown. Till the fifteenth century, no medals appear of any country in Europe; excepting of Scotland, which has gold medals of David II., in the middle of the fourteenth century. These were struck in England during his captivity. The medal of John Huss, the famous reformer, which was struck in 1415, seems to have led the way for the series of medals, which afterwards sprang up in the different countries of Europe. The papal medals are not only the most elegant, but the most ancient series in Modern Europe. Paul II. created pope in 1464, is the first pontiff who has medals of his own time. After Paul II. coëval medals are found of all the popes. As it is the especial object of medals to commemorate among the people of the

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existing generation, and of those who come after, some illustrious person, or some important event, no more proper occasion could have ever arisen for exercising this honourable privilege, than the discovery of America by Columbus in 1492, and the extension of this discovery soon after by Amerigo Vespucci.

The Spanish medals begin in 1503, and many of them are curious and interesting. Germany and Spain were as one empire under Charles V., of whom there are many medals: but the German ones begin with Frederic III., of whom there is one struck at Rome, A.D. 1453. Besides the papal medals, there are many belonging to the various states of Italy. Denmark, Sweden and Holland have likewise signalized themselves by medallic achievements.

Next to Italy, France is the most remarkable country for

MEDAL STRUCK BY NAPOLEON TO COMMEMORATE THE INVASION OF ENGLAND

medals: but the French medals are neither fine nor numerous till the reign of Louis XIV., in the middle of the seventeenth century. There are also series of fine medals, comprising those which were struck under the consulate and the empire of Napoleon, down to the reign of the present king. The Napoleon collection at Boulogne contains one of the medals intended to commemorate the threatened invasion of England. It represents a Herculean figure disabling and crushing a monster, half man and half fish, which latter is meant to represent the British nation. The legend is DESCENTE EN ANGLETERRE. On the exergue is *Frappé à Londres, en* 1804. This was probably done to excite the confidence and vanity of the French people; but, as the scheme of invasion was either a feint or a failure, these medals were almost all soon suppressed, and no opportunity afforded for giving the shadow of truth to the exergue of the medal—"*Struck at London, in* 1804!"

As soon as medals began to revive, in the fifteenth century, they were made to serve the purpose of satire, until the printshops took to the business. Many satiric medals passed between Philip, king of Spain, and Elizabeth, queen of England. Satire seems to have been unknown to the ancient mint: but, in these later ages, a great number of medals have been struck for private men of eminent learning or talents; and in this respect modern medals excel those of the ancients. As to the execution of modern medals in comparison with ancient ones, in all that relates to portraits, human figures, and other detached objects, the ancients far exceed the moderns in character, truth, and taste: but in landscape, and all that belongs to perspective, the moderns are superior: when, for instance, we have on an ancient medal the view of a building, we see only its elevation; but on a modern medal the perspective is also afforded. An especial fault, however, too often occurs in modern portraits and reverses,—that the manners of the time and country are very often totally perverted. Personifications are of all ages, countries, and languages: heathen gods and goddesses thrust themselves upon Christian medals, and attract the adoration of connoisseurs! The like objection also applies, in great measure to our coinage:—but the fault here complained of is largely partaken in by the arts of painting and sculpture; though it must be admitted that, with every generation, the public taste is herein improving.

The first English medal was of brass, A.D. 1480. Henry VIII. struck one of gold in 1545; and the first coronation medal was that of Edward VI. The medals of Simon, in the seventeenth century, are admirable. The medals of Queen Anne are illustrative of the achievements of Marlborough; and those of the English kings, executed soon after by Dassier, a native of Geneva, are very good: the latter are thirty-six in number, and are struck in fine copper.

The devices on the English coronation medals, are usually on the one side a representation of the sovereign, and on the other, some emblem of the circumstances of the period; but not always in the best taste.

At the coronation of George III., the king's gold and silver medals were struck by Laurence Nattier, and were ornamented on one side with his majesty's bust, and the inscription, GEORGIVS III. D.G.M. BRIT. FRA. ET HIB. REX. F. D.; and on the reverse, was a figure of the sovereign seated, with Britannia holding a crown above his head, and the inscription, PATRIAE OVANTI (*To his country triumphing*), CORON. XXII. SEPT. MDCCLXI.—Silver medals of the queen were also thrown into the scaffolding, and amidst the populace. On one side was represented her bust, with the inscription, CHARLOTTA D.G.M. BR. FR. ET HIB. REGINA; and on the other side her figure appeared at full length, standing by an altar, with a seraph about to crown her: the whole being encircled by the motto, QVAESITVM MERITIS. (*By merit obtained*), CORON. XXII. SEPT. MDCCLXI.

SECTION VI.

STUDY OF COINS AND MEDALS—PEMBROKE COLLECTION—UTILITY OF MEDALS—COUNTERFEIT MEDALS—CABINETS—MEDALLIONS AND MEDALETS.—PRESERVATION OF COINS AND MEDALS.

History informs us that cabinets and series of Greek coins were formed by the Roman senators, as choice treasures: this was natural, considering that the Romans respected the skill and talent of the Greeks in all the arts and embellishments of life. Some of these sets of medals and coins of cities have come down to our times: but yet it must be owned, that the taste of the Romans was rather for *gems* than for medallic specimens. When, however, literature began to be cultivated in Italy, at the end of the fifteenth century, the study of medals was found conducive to the knowledge of ancient geography and history, and of ancient literature generally. In the succeeding century, cabinets began to be formed universally by people whose minds were awakened to the increasing light of knowledge. Hence we have, likewise, ancient orthography and customs elucidated, and the lives of the great men of antiquity enriched with their portraits. In the middle of the sixteenth century, Goltz, a printer and engraver, travelled over Europe in search of coins and medals, for the benefit of certain works relating to them, which he was about to publish. Excepting Italy, more ancient coins seem to have been found in Britain than in any other country. Camden is thought to have been the first English writer who produced medals in his literary compositions, about A.D. 1600. After this, we have many works illustrated with coins: such as SPEED's *Chronicle*, 1610. Henry, prince of Wales, eldest son of James I., left to his brother Charles I. his collection of coins and medals, amounting in number to about 30,000. This cabinet was broken up and lost during the civil wars of his reign.

It would take us too long to enumerate the different public and private cabinets now existing: but we are tempted to observe that one of the finest collections in the world is that of Thomas, the eighth earl of Pembroke, who died in 1732, and who was the collector of the statues, &c., at Wilton House, South Wilts. This collection is vested in trustees, and deposited in the Bank of England, for sale, where they even now wait a purchaser who can command about 30,000*l*. They were published in a huge octavo volume in the year 1746.

As ancient architecture, sculpture, and poetry, have tended to improve the taste of modern times, so the study of coins and medals assists in promoting the same end; being particularly useful in guiding the judgment and views of the lovers of such arts and sciences as we just mentioned. Besides the ancient portraits on the obverse, which are likely to kindle the admiration of the painter and the sculptor,

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the architect, as well as the painter, has on the reverse exquisite views of ancient edifices, which are found in perfect preservation on medals. Triumphal arches, temples, fountains, aqueducts, amphitheatres, circuses, hippodromes, palaces, basilicas, columns and obelisks, baths, sea-ports, pharoses, and the like, are all found on the reverses of ancient medals.

To a person of poetical imagination, the Roman coins are very entertaining, on account of the fine personifications and symbols which are to be found on their reverses. What can the additional experience of the world, during 2000 years, add to the personification of HOPE found on the reverse of an ancient medal? She is there represented as a sprightly damsel, walking quickly, and looking straight forward; with her left hand she lifts up her garments, that they may not hinder the rapidity of her pace; while in her right hand she holds forth a rose-bud, an emblem infinitely more fine than the trite one of an *anchor*, which is the symbol of *Patience*, not of Hope. Happiness, Abundance, Security, Piety, Modesty, and the like, are all shadowed out under similar apposite emblems, springing out of Nature herself, and therefore just and true. Many passages of Sacred History are likewise illustrated or explained by reference to medals. The Mosaic account of the Deluge is confirmed by a coin struck at Apamea in Asia Minor, in the reign of Philip I., about 650 B.C. On the reverse of this medal is a chest floating upon the waters: a man and woman seem coming out upon dry land. Above it hovers a dove with an olive-branch; and another bird is perched upon the roof. On the front part of the chest is the word NOE in Greek characters. Seven or eight of these medals are extant, and they are admitted by the best medallists to be genuine.

On some medals of Commodus, who lived at the latter part of the second century of the Christian era, the Supreme Deity is represented under the form of a bull, as indicative of his supreme power. On the reverse of some of the medals of Marcus Aurelius, who reigned somewhat earlier, are seen the bull and serpent. On the medals of Persia, and in the works of Zoroaster, this worship was practised. He represents God under the figure of the serpent, and describes him as "the master of all things—exempt from death—eternal in his duration—without beginning, and without parts."

On the medals of Tartary we find the figure of the serpent: on the reverse of a medal of Tyre we find the serpent encircling an egg; and we see the same figure on the medals of Japan: this people, in their cosmogony, say it was the warm breath of the serpent that called into life the first man.

As those coins and medals which are scarce, are, from that cause, the more valuable, whether they be the old Roman coins of lead,—or coins and medals in copper, brass, silver, or gold,—the metal itself merely affecting the value according to its weight,—it is not to be wondered at that a considerable part of the science of numismatics should consist in enabling the medallist to detect forged imitations of the objects of his regard. This art of forging is said to have arisen at the beginning of the sixteenth century, and it has since prevailed to a great degree. Counterfeit medals come under six heads: 1. Medals known to be modern imitations of the ancient, but valuable, because executed by the best Italian masters: 2. Medals cast from the former: 3. Medals cast in moulds taken from the antique: 4. Ancient medals retouched, and the obverses or reverses altered: 5. Medals impressed with new devices, or soldered: 6. Counterfeit medals which have clefts, or which are plated. When the art of imitating the genuine antique coins began to be practised, it was at first without any intention of deceiving, but merely to facilitate the study. The very clever imitations, however, of the artists of Italy soon passed for genuine, and became an article of a trade, which has continued to this day. This consideration is apt to throw great damp upon the zeal of the numismatic student.

Cabinets of medals are usually ranged into three distinct sizes: 1. That which contains, or is intended to contain, every issue of the mint, in every age and country. Such a cabinet belongs only to national museums, princes, and others who have the command of great wealth. The Pembroke Cabinet, before spoken of, is one of those. 2. The smaller cabinet contains several sequences, or particular series of medals, from the earliest to the latest times; other medals, or such as belong to other sets, being received from curiosity and in order to give variety to the collection. 3. The smallest cabinet, usually called a *casket* of medals, includes all little collections of coins; in which, perhaps, not more than one sequence, or series, can well be formed. The coins of the Middle Ages form the department of study now chiefly pursued, with a view to the elucidation of history.

MEDALLIONS and MEDALETS belong likewise to the family of medals. Medallions were, in former times, medals of a size larger than ordinary; such a one is that which forms the frontispiece of our former paper. They were never current coins, as medals were; but were struck to serve as public monuments, or to be presented by a monarch to his friends, or by the mint-makers to a monarch, as specimens of fine workmanship. Medallions were commonly issued upon the commencement of a new reign, as coronation-medals are in these later days. Medalets were small coins, scattered among the people on solemn occasions: they were also struck for the use of slaves, and served as counters in gaming, tickets for baths and feasts, and money-tokens in general.

It is the opinion, however, of some medallic scholars, that the medalets of lead, alluded to in our former paper, were a species of mock money, used at the time of the Roman Saturnalia, when all the different usages and customs of society, whether good or bad, were ridiculed and parodied. Among many whimsical regulations made to gratify the Roman populace, during this week of general licence, was one which forbad the use of money: if any one offered a legal coin in payment, it was to be condemned as an act of madness, and the man was brought to his senses by a penitential fast for that day. To ridicule the idea of money, the mob rulers stamped this leaden circulating medium with the most grotesque figures and the oddest devices, such as a sow, a jackass, a fabulous bird, a general in his car with a monkey behind him, &c. As all this was done in mockery, this base metal was stamped with the letters S.C. See p. 86, col. 2. Pinkerton, referring to these lead *coins*, or *tickets*, regrets that "such curious remains have almost escaped the notice of medallists, and have not yet been arranged in one class, or named. A special work on them would be highly acceptable."

When a medal is in the least defaced in figures or in legend, the medallist will reject it, hardly excepting even the rarest coins. Hence, it becomes of importance to preserve medals in their original perfection, or as nearly so as possible. Nothing contributes so much to preserve brass and copper coins, as the fine rust, called in Latin *æruga*, which appears like varnish on them, and which depends for the sort of it upon the particular situation or soil in which the coin or medal may have been lying for ages. There are, therefore, different kinds of rust; but, as Pinkerton says, "These rusts are all, when the real product of time, as hard as the metal itself, and preserve it much better than any artificial varnish could have done; concealing, at the same time not the most minute particle of the impression of the coin." In the case of gold and silver, the purer these metals are, the cleaner and freer from blemish, and the more mint-like will they be, wherever found, and whenever we may have to examine them: but the books of the medallists must be consulted by him who wishes to prosecute this subject, and who may, therefore, desire and need to acquaint himself further with all the spots, blemishes, and tarnishes, which obscure or adorn medals, and the means prescribed for safely removing them.

An examination of the medal-room of the British Museum, together with a perusal of more extended and systematic works on Numismatics, or the Science of Coins, &c. will promote and improve the taste of the reader for a subject so interesting to the poet, the painter, the architect, the historian, and the man of literature generally.

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"COMFORT YE THE FATHERLESS AND THE WIDOW." FROM A GROUP BY FLAXMAN.

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JOHN FLAXMAN AND HIS WORKS.
III.

> . . . . . The statue seemed to breathe,
> And soften into flesh; beneath the touch
> Of forming art, imagination-flushed.—THOMSON.

SEVERAL statues, designed to commemorate the distinguished persons of his time, now came from the hand of Flaxman. That of Sir Joshua Reynolds is one of his first and best. The painter is made to hold his Discourses on Art in his right hand, while the tips of the fingers of his left reach the top of a pedestal, or altar, on the side of which is a portrait of the saint he professed to worship—Michael Angelo. There is in this work much tranquil dignity of look. A colossal figure of Sir John Moore was next made in bronze for the city of Glasgow; and the statue of Pitt was set up in the Town Hall of the same place. It is curiously observed respecting this last performance, that "both man and dress are too real and literal to excite that loftiness of feeling which is, or ought to be, the grand aim of noble works of art." "Why so?" the reader may probably ask. Let his biographer speak in extenuation of the sculptor's failings: "Here is a specimen of the school of tailor-sculpture: the capes, cuffs, seams, buttons, and button-holes, are all in the way of dignity: indeed it is a difficult matter to treat them tastefully." So true it is that, in the nineteenth century,—at two thousand years' distance of time,—the feeling is still abroad, that a British member of parliament, in order to inspire respect, should be decorated with the Roman toga!

But the works which were grateful to Flaxman were those which embodied poetical passages in the Bible, and with such he was ever ready to commemorate the dead. Such scriptural comments in marble were readily admitted in churches, and in this way statues and groups from his hand were spread abroad in India, Italy, Scotland, Ireland, and the West Indies. He made a statue of the Rajah of Tanjore, and a monument to the missionary Schwartz, both of which are now in the East, and have been noticed in the journals of Bishop Heber.

In the year 1810 the Royal Academy, after some consideration, created a professorship of sculpture, and bestowed it upon Flaxman. He proceeded to fulfil the duty of his office with enthusiasm and knowledge; and to his first lecture, delivered in 1811, flocked academicians, students, and connoisseurs. His works and his reputation bespoke respectful attention. His lectures were ten in number, and with these lectures both the sculptor and the painter should be familiar: the subjects are—1, English Sculpture; 2, the Egyptian; 3, the Grecian; 4, Science; 5, Beauty; 6, Composition; 7, Style; 8, Drapery; 9, Ancient Art; 10, Modern Art.

Some of his illustrations of the Pilgrim's Progress, belonging to this time, are said to equal that religious romance in simplicity, and to far surpass it in loftiness. The like may be said of his designs for Sotheby's translation of Oberon. But the author who most delighted the fancy of Flaxman was Hesiod, of whom there are thirty-six illustrations; and these for simplicity, loveliness, and grace, fairly rival any of his other works. They embody the story of Pandora, and show the effects of her descent to the earth. One of these the artist thought so well of that he modelled it in relief,—Mercury conducting Pandora from heaven to earth, and skimming with his charge through the air like a bird.

In the year 1820 Mrs. Flaxman died, after having lived with her husband thirty-eight years: the biographers make no mention of a family; so that we conclude that no sculptor in the second generation aspires to the glories of his sire.

He was now sixty-six years old, and was surrounded with the applause of the world. His two chief works at this period were the Archangel Michael vanquishing Satan, and the Shield of Achilles. The latter was executed by commission from Rundell and Bridge, the eminent silversmiths; and, as it is considered to be one of the artist's most successful works, we shall do well in dwelling a little upon the description of it.

The detail of the various designs worked upon the exterior surface of the shield of Achilles is found in the eighteenth book of Homer's Iliad. This work of Homer is so named because it relates to *Ilion*, or Troy. The poet lived about eight hundred years B.C., and the destruction of Troy took place nearly two hundred years before Homer's time. The occasion, in the poem, for the description of the shield, is when Vulcan, by desire of Thetis, the mother of Achilles, makes the hero a new shield, together with a new set of arms; as Achilles, having lent Patroclus, his friend, his own armour, had lost it all, in consequence of Patroclus being slain, and then stripped by Hector.

The description of the poet, which we shall presently epitomise, is interesting, as affording a picture of ancient life and manners, and a charming view of nature in the early stages of society. It shows, moreover, that the art of design, and of working in metals, had attained a very high degree of perfection among the Greeks, at a period of which we have no positively authentic records.

It was the intention of the poet, as Pope justly observes, "to draw the picture of the whole world in the compass of this shield. We see first the universe in general: the heavens are spread; the stars are hung up; the earth is stretched forth; the seas are poured round. We next see the world in a nearer and more particular view; the cities delightful in peace or formidable in war; the labours of the country, and the fruit of those labours in the harvests and the vintages; the pastoral life in its pleasures and its dangers: in a word, all the occupations, all the ambitions, and all the diversions of mankind."

The shape of this celebrated shield was circular, and most probably four feet in diameter. Flaxman has, however, reduced the diameter to three feet. Round the border he first wrought the sea, in breadth about three fingers, wave following wave in quiet undulation. On the central boss he has represented Apollo, or the Sun, in his chariot: the horses seem starting forward, and the god bursting out in beauty, to give light to the universe around him. The circle of which Apollo is the centre is in diameter little more than a foot. On the twelve scenes which fill the space between the ocean-border and the general representation of the universe he shed all his learning and skill. These scenes we will now briefly describe.

After the delineation of the heavens with the sun and full moon, the signs of the Zodiac, and other principal constellations of the northern sky, we have a representation of two beautiful cities, one in a state of peace, and the other in a state of war. In the city at peace we have three distinct scenes, and we have the like in the city at war.

The first scene in the peaceful city represents a marriage festivity,—the second a trial for murder, and the fixing of the homicidal fine,—and the third a debate in the senate.

The first scene in the warlike city exhibits the formation of an ambush on the part of the besiegers, and a sally on the part of the besieged: the second shows shepherds with their cattle falling into an ambuscade,—and the third presents the battle.

As the earliest occupations of mankind consisted in agriculture, and the tending of cattle, we are next presented with a set of views of agricultural and pastoral life among the ancients. The first of the three agricultural scenes exhibits the tillage of the ground,—the second the harvest,—and the third the vintage. The first of the pastoral scenes presents us with a view of a herd of oxen attacked by lions, in spite of the keepers and their dogs; the second scene is that of sheep with the shepherds, together with the folds and huts,—and the last a dance, or rustic merriment.

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In Flaxman's design the figures are generally about six inches high, and vary in relief from the smallest visible swell to half an inch. There is a convexity of six inches from the plane, and the whole contains upwards of a hundred human figures. Of this superb work our artist was justly proud. He received 620*l.* for the drawings and model. The first cast, in silver gilt, price 2000 guineas, was placed by King George the Fourth on his own side-board: a second was presented by him to his brother, the Duke of York; a third was made for Lord Lonsdale; and a fourth for the Duke of Northumberland. Two casts in bronze were made by the proprietors for themselves, and three were prepared in plaster,—one for the Royal Academy, another for Sir Thomas Lawrence, and a third for Flaxman himself.

It is considered that some of the noblest of Flaxman's works belong to his latter days; for example, his Psyche, his Pastoral Apollo, the statues of Michael Angelo and Raphael, and the group of the Archangel Michael and Satan. The Psyche and the Pastoral Apollo have a certain austere composure about them. The Michael Angelo and the Raphael are described as "poetic, yet real; heroic, yet familiar; and their costume, though not antique, is at once historic and picturesque." The group of Michael and Satan is spoken of as "a work of the highest merit—the conception is epic—the grouping grand, and the action godlike. The good angel is triumphantly trampling the evil one under his feet; and from the subdued agony of the latter, we may see that he has felt the heavenly spear." In this group there is a divine composure: "all is elevated—there is nothing low—there is much to excite awe, and nothing to disgust."

In the year 1825 Allan Cunningham and Flaxman became personally acquainted. The sculptor was making a statue of Burns, whose poetry he was very fond of; and his prospective biographer, being invited to see it, while in progress, visited the artist in his studio.

In the succeeding year, during which he was occasionally ailing, a very singular circumstance occurred to him. On Saturday, the second of December, he rose about nine o'clock in the morning, and found a stranger waiting to see him. "Sir," said the visitant, presenting a book as he spoke, "this work was sent to me by the author, an Italian artist, to present to you, and at the same time to apologize for its extraordinary dedication. In truth, Sir, it was so generally believed throughout Italy that you were dead, that my friend determined to show the world how much he esteemed your genius, and having this book ready for publication, he has inscribed it 'Al Ombra di Flaxman.' (To the shade of Flaxman.) No sooner was the book published than the story of your death was contradicted, and the author, affected by his mistake, which nevertheless he rejoices at, begs you will receive his work and his apology."

On this day our artist felt well and cheerful. On the next day he went to church, took cold, refused medicine, but went to bed. On Monday he said that he felt himself well enough to receive his friends to dinner whom he had invited. They came, but were touched with the change in his looks, though they left him without feeling the apprehension of seeing him no more. An inflammation of the lungs was the result of the cold which affected him on Sunday, and the disorder spread with fatal rapidity. He found himself unable to breathe when lying in bed, and in spite of all that could be done for him, he died on Thursday morning, December 7, 1826. His body was accompanied to the churchyard of St. Giles-in-the-Fields, by the president and council of the Royal Academy, on the fifteenth of the same month. The following is inscribed on his tomb:—"John Flaxman, R.A, P.S.*, whose mortal life was a constant preparation for a blessed immortality; his angelic spirit returned to the Divine Giver on the 7th December, 1826, in the seventy-second year of his age."

* Professor of Sculpture in the Royal Academy.

We will now conclude our notice of the life of Flaxman, by briefly summing up his artistic character in the words of his excellent biographer:—

Of his works there are four kinds,—the religious, the poetic, the classic, and the historical. In each of these he has left specimens which give him high rank among the sons of genius, but in all of them he has not attained the same degree of excellence; in the historical he was embarrassed with the unpoetic costume of these days of buttons and capes; in the classic he was compelled to obey the antique; but in the poetic and the religious he has been surpassed in purity and simplicity by no modern sculptor.

ON CHESS.

IX. Chess Writers and Players. (*Continued.*)

Behold four *Archers**, eager to advance,
Bend the light reed, and rush with sidelong glance;
Thro' angles ever they assault their foes,
True to the colour which at first they chose.

Sir William Jones.

Our last account of Chess players and writers brought us to about the middle of the sixteenth century,—a period when many excellent players of the game and several chess authors flourished. Among the former was no less a personage than John Frederick, elector of Saxony, who in 1547 was taken prisoner by the Emperor Charles the Fifth, and condemned to suffer death by being beheaded. Dr. Robertson, the historian of Charles the Fifth, says:—

This decree was intimated to the elector while amusing himself in playing at chess with Ernest of Brunswick, his fellow prisoner. He paused for a moment, though without discovering any symptom either of surprise or terror; and after taking notice of the irregularity as well as injustice of the emperor's proceedings,—"It is easy," continued he, "to comprehend his scheme. I must die because Wittemberg will not surrender; and I shall lay down my life with pleasure, if, by that sacrifice, I can preserve the dignity of my house, and transmit to my posterity the inheritance which belongs to them. Would to God that this sentence may not affect my wife and children more than it intimidates me, and that they, for the sake of adding a few days to a life already too long, may not renounce honours and territories, which they were born to possess." He then turned to his antagonist, whom he challenged to continue the game. He played with his usual attention and ingenuity, and having beat Ernest, expressed all the satisfaction which is commonly felt on gaining such victories. After this he withdrew to his own apartment, that he might employ the rest of his time in such religious exercises as were proper in his situation.

He was not, however, put to death, for in 1552, "before Charles left Inspruck, he withdrew the guards placed on the degraded elector, whom, during five years, he had carried about with him as a prisoner, and set him entirely at liberty."

Paolo Boi, a Sicilian, of the city of Syracuse, is one of the most distinguished chess-players of this time. The best account of him is contained in Carrera's elaborate *Treatise on Chess*, (of which we shall presently speak,) and it is from Mr. Lewis's translation of that rare work that we gather the substance of the following narrative. Paolo Boi was born of a rich and good family, and when a boy displayed great quickness of apprehension, so that he made considerable progress in literature at an early age. It was soon discovered that he had a wonderful talent for the game of chess, so that he could easily beat all the players of his native city At this time the fame of the Spanish players, and the honours and rewards bestowed on them by Philip the Second, who was exceedingly fond of the game, excited the emulation of the youth, and he resolved to go to

* The bishop was formerly called the archer. See *Ante*, p. 79.

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Spain, but first travelled through Italy, trying his skill with the best players that country could afford. Amongst others he played with "Il Puttino," and had the honour of being considered his equal, so that the two were spoken of as the light and glory of the game of chess. Paolo became the favourite of many of the Italian princes, particularly of the Duke of Urbino, several of the cardinals, and even of Pope Pius the Fifth, who would have given him a considerable benefice if he would have become a priest, but this he declined. Paolo was nevertheless a rigid observer of the forms, and partook largely of the superstitions of the Romish church, as appears from the following circumstance. When at Venice he played with a person whose name is not recorded, and lost every game. Upon reflection, and after having examined the games with great care, he found that he ought to have won; and not being able to account for his want of success, he began to suspect his adversary of using some secret art, whereby he was prevented from seeing the moves. To counteract these evil arts, he therefore resolved to play again with his antagonist, and to arm himself for the encounter with a rosary, rich in the valuable relics of great saints, and also by previously receiving the sacrament. Having done this he conquered his adversary, who, after his defeat, is said to have exclaimed, "Thine is more potent than mine."

At length Paolo arrived in Spain, where he played in the presence of Philip the Second, who gave him the revenue of certain offices in the city of Syracuse, of the value of five hundred scudi a year. Boi was a bold and daring character, and was very desirous of being employed in the service of the brother of the king, Don Giovanni d'Austria, on which account the king wrote a letter of recommendation in favour of Boi, from which we learn that Paolo had before served the king, though it is not stated on what occasion. The next notice we have of Boi's chess achievements is, that he played with some of the principal persons of the kingdom of Portugal, and won eight thousand scudi in one day. He also played with Sebastian, king of Portugal, who not only took delight in the game, but played it himself, and was reputed a good player. They often played three or four hours a day, and it is mentioned as an especial mark of the king's condescension, that once when the king was standing playing, and the Syracusan, (as was his duty,) with one knee on a cushion, having played a long time, and being desirous of resting, the king assisted with his arm to raise him, that he might kneel on the other knee.

Thus honoured by kings, Paolo Boi was highly esteemed by many noblemen of Sicily, Rome, Naples, and other places, and highly rewarded by them. He also went to Hungary, where he played with the Turks, who are particularly fond of the game, playing by memory when riding on horseback. Boi was in foreign countries during twenty years, so that in his own country he was supposed to be dead, for he unwillingly gave any account of himself. When he returned to Sicily he had no fixed place of residence, for he was often going from one city to another, either for his own pleasure, or to please some prince. On one of these occasions he met with his death, for when in Syracuse he was invited to Naples by the Princess of Stigliano, who, as well as her father, highly esteemed him. Three hundred scudi of gold were sent to him, to defray his travelling expenses; but shortly after his arrival in that city he was seized with a complaint in his stomach, brought on by the exertion of hunting, and died in the year 1598, having attained his seventieth year. His body was interred in the church of St. Francesco di Paolo, his obsequies being sumptuously celebrated in the presence of Prince Stigliano, and other Neapolitan cavaliers. This is Carrera's account of his death, but Salvio says he was poisoned by his servant for the sake of the wealth he had acquired. The description of Boi's person and character are thus given by Carrera:—

I knew him in my youth, when I was at the city of Palermo, in the year 1597: his hair was quite white, his form robust, his mind firm. He dressed very fashionably, like a young man, and was very capricious; nevertheless he had many good qualities: he was exemplary in his conduct, —was extremely liberal and munificent—very charitable, —he attended mass every day, always giving alms to the priest that officiated, whoever he might be,—he confessed and took the sacrament frequently, and was very partial to religious persons. He never would allow any portrait to be taken of him, and the drawings of him that are now seen were made without his knowledge. He never would be persuaded, even in his old age, to fix his residence in his own country or elsewhere. In stature he was rather tall, well-proportioned, handsome, lively; eloquent in conversation, and gay and affable with every one. He left some writings on the game of chess, which I have not seen. I have thought it proper to give a full account of such a man, that his name may be known to posterity.

It does not appear that the writings here spoken of were ever printed.

Catherine de Medicis is spoken of as being a chess-player, and Paolo Boi much wished for an opportunity of playing with her, but was disappointed. Queen Elizabeth also seems to have known something of the game, and on a particular occasion, when Sir Charles Blount, (afterwards Lord Mountjoy,) had distinguished himself at a tilting-match, she sent him as a present a chess-queen of gold, at the same time highly enamelled. Her successor, James the First, may be likewise ranked among the royal chess-players, though he warns his son against the game, "because it is over-wise." This counsel does not seem to have been acted on, for we find a magnificent bag and elegant set of chess-men, which belonged to Charles the First, spoken of by Barrington as having been exhibited to the Society of Antiquaries.

During the sixteenth century many passages in contemporary writers seem to show that chess was practised more or less in England. A kind of comedy, by Middleton, on the game of chess was frequently acted at the Globe theatre on Bankside. It was a sort of religious controversy, the game being played by a member of the Church of England and another of the Church of Rome, and the former, in the end, gaining the victory. The play was considered too political, and the author was committed to prison, from which, however, he obtained his release by the following petition to the king:—

A harmless game, coyned only for delight,
'Twas played betwixt the black house and the white;
The white house won—yet still the black doth brag,
They had the power to put me in the bag.
Use but your royal hand; 'twill set me free,—
'Tis but removing of a man——that's me.

This century was likewise distinguished by the production of a Latin poem on chess. Marcus Hieronymus Vida, of Cremona, bishop of Alba, wrote a poem in praise of chess, called *Scacchia Ludus*, (the game of chess.) Of this work an extraordinary number of editions have been printed in various languages. Mr. Walker enumerates no fewer than twenty-four new editions or reprints of this work in Latin, eleven in Italian, five in French, and several in English.

The year preceding Boi's death (1597) Horatio Gianutio published his *Treatise on Chess*, at Turin. This book is extremely rare, and does not appear to have been remarkable for merit. Dr. Alessandro Salvio's work, which was published in 1604, is far superior. Salvio was considered the most ingenious master of his time, and his openings of games are said to evince the fertility of his genius and his promptness at resource. "Unfortunately," says Sarratt, "most of his openings are of little use in countries where the king is limited in his castling. Salvio, when he had the move, commonly castled in a manner which is not allowed in this kingdom, that is to say, he moved his king to his rook's square,

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and his rook to his king's square." Salvio's book, *Il Puttino*, contains a historical account of the game of chess, and of players, with upwards of sixty games.

Don Pietro Carrera, of Militello, in Sicily, was the next chess writer of importance. His work appeared in 1617, a quarto, of six hundred pages, containing an account of chess and chess-players, a description of the pieces, and a number of games. Among his rules or cautions for playing, the following are distinguished both by oddness and sagacity:—

He who plays must not have his mind occupied elsewhere, perhaps in things of importance, because, without doubt, he will then be the loser.

Whoever is to play an important game must avoid filling his belly with superfluous food, because fulness is contrary to speculation, and offuscates the sight, so that it is necessary he should observe strict sobriety. Those people are praise-worthy, who, previous to playing, clear their head by medicines which have the virtue of rendering the spirits pure and subtile, by which means they may enter into the consideration and acuteness of the moves, with the greater intension.

Carrera invented two new pieces, to be added to the eight original chess-men. That which he calls *Campione* was placed between the king's knight and castle: its move is both that of the castle and of the knight. The other, named centaur, between the queen's knight and castle has the move of the bishop and knight united. Each of these pieces has its pawn, and, of course, the board must contain two more squares on each side, which will augment their number to eighty. This invention appears to have died with the inventor. Carrera was the author of works on divers other subjects, and is said to have been more versed in Sicilian antiquities than in chess. We may here quote a portion of his recommendatory chapter on chess; he says:—

I do not deny that the time which is spent in playing, might be better spent in holy and praiseworthy works, but human weakness does not permit us to find ease in the constant practice of virtue; so we are easily inclined to pleasures, to vanities, and to vices; and in order not to be led into them and offend the Creator, we choose to apply ourselves to exercises of the body and mind. Whence, that youth who employs himself at chess, though he may have played all day, will have gained thus much, that he has not played at dice, and that he has eschewed idleness, which abounds in sins. As to remaining with the eyes fixed on the chess-board, it not only does not cause fatigue, but, on the contrary, great delight, and those who imagine it tires the intellect, are greatly mistaken, the solace and food of our mind being speculation; for the truth of which I appeal to those, who, being passionately fond of study, remain for many hours without lifting their eyes off their books.

CHESS BISHOP, AS DESIGNED BY FLAXMAN.

LILY OF THE VALLEY, *Convallaria Majalis.*

Sweet flower o'the valley, wi' blossoms of snow,
And green leaves that turn the cauld blast frae their stems;
Bright emblem of innocence, thy beauties I lo'e,
Aboon the king's coronet circled wi' gems.
There's nae tinsel ahint thee, to make thee mair bright,
Sweet lily! thy loveliness a' is thine ain,
And thy bonny bells, dangling sae pure and sae light,
Proclaim thee the fairest o' Flora's bright train.—J. L. S.

THE flowery month of May produces no plant of more exquisite fragrance, or more delicate form, than the Lily of the Valley.

In floral language it is made to represent a return of happiness, because it announces by its elegance and its odour the happy season of the year.

The graceful manner in which these perfumed bells are suspended on the stem, and the agreeable contrast which their broad leaves of bright green afford to the snowy corollas, could not escape the notice of our poets. Bernard Barton thus speaks of this flower:—

And sweetest to the view,
The lily of the vale, whose virgin flower
Trembles at every breeze beneath its leafy bower.

Mr. Leigh Hunt calls them:

The nice leaved lesser lilies,
Shading, like detected light,
Their little green-tipt lamps of white.

Keats says:—

No flower amid the garden fairer grows
Than the sweet lily of the lowly vale.

Hurdis moralizes on this flower that flourishes so well in the shade, where gayer plants would not exist:—

To the curious eye
A little monitor presents her page
Of choice instruction; with her snowy bells,
The lily of the vale. She nor affects
The public walk, nor gaze of mid-day sun:
She to no state or dignity aspires,
But silent and alone puts on her suit,
And sheds her lasting perfume, but for which
We had not known there was a thing so sweet
Hid in the gloomy shade. So when the blast
Her sister tribes confounds, and to the earth
Stoops their high heads, that vainly were exposed,
She feels it not, but flourishes anew,
Still sheltered and secure. And as the storm,
That makes the high elm couch, and rends the oak,
The humble lily spares,—a thousand blows
That shake the lofty monarch on his throne,
We lesser folks feel not. Keen are the pains
Advancement often brings. To be secure,
Be humble; to be happy, be content.

When poets thus sweetly endeavour to reconcile us to humble stations, their works may be compared to lilies of the valley, which give pleasure to all that behold them, and can never be found offensive by any rank or station of men. Prior, after looking at this flower, wrote:—

Why does one climate and one soil endue
The blushing poppy with a crimson hue,
Yet leave the lily pale, and tinge the violet blue.

These are reflections which flowers bring to our contemplation, and which must always end in our admiration of the infinite wisdom of the Creator, who formed man with mind, and the lily with fragrance.

This elegantly modest plant formerly grew in our woods and valleys in great abundance, but the increase in the number of our gardens, and the high state of cultivation of the country in general, have rendered the plant rare in its natural state; yet it is cherished in the garden by all the admirers of good flowers. Gerard tells us as late as 1597, that it then grew abundantly on Hampstead Heath, also on "Bushie heath," now Bushy Park, likewise near Lee in Essex, and it has been found in most counties of England, and is indigenous to most parts of Europe from Italy to Lapland: it grows abundantly in the woods of France and Germany.

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The name of lily has been very improperly given to this species of Convallaria, as it has not the least affinity with the lily either in its root, fruit, or flower. We presume that it was called a lily from the purity of its white corolla, for even at the present time, notwithstanding we have orange and scarlet lillies, we attach an idea of delicacy to the very name of lily. As it grows spontaneously in shady valleys, it is natural to call it the lily of the valley. The name of *Convallaria* is derived from convallis, a valley. It was called May lily from the month in which it flowered.

The proper situation for this plant in the garden is the most rural and rustic part, where it is partially shaded by shrubs and trees; and it flowers even better in a north aspect than when fully exposed to the noonday sun. It will grow in almost any earth, but it produces most flowers in a loose sandy soil that is rather poor than otherwise; for when planted in a rich garden mould, the roots spread and multiply rapidly, but the plants give but few flowers, and like most other creeping rooted plants, it seldom produces seed when it can propagate itself so readily by the nature of its roots.

The lily of the valley is a desirable creeper for the shady banks of lakes and ornamental streams, and we love to meet its grateful fragrance beneath the pendulous branches of the Babylonian willow, although

> Nymphs and shepherds dance no more
> By sandy Ladon's lilied banks.—MILTON.

The autumn is the proper season for placing these perennial fibrous roots in the ground, when they should be covered with about two inches of earth, and not be disturbed oftener than every third or fourth year, as they seldom flower strong or plentifully after being removed. The plants should be kept free from weeds, and the roots thinned once in three or four years, according to the nature of the soil, and the increase of the plants

The lily of the valley is one of the flowers that bears forcing in pots, and as but few plants are more agreeable for the house in the months of March and April, this mode of flowering the Convallaria Majalis should never be omitted by the florist who has the opportunity of doing it; and we strongly recommend the potting of their plants abundantly for the town, which at any reasonable price will never return unsold from the market, for it is a flower worthy of Paradise, and

> Whoever a true epicure would be
> May thee find cheap and virtuous luxury.—COWLEY.

These plants are so numerous in the woods of Eileriede, in the neigbourhood of Hanover, that the ground in many places is completely covered with them, and the air scented for a considerable distance by their agreeable perfume. These woods are regularly visited on Whit-Monday by numerous parties from Hanover, who go to gather these May-flowers, and the forest on that day is a scene of festivity and mirth. Cottages are erected for the sale of coffee and other refreshments, and neither the pleasures of tobacco, nor the twirling waltz, are omitted on that occasion. The roads leading to the forest are thronged throughout the day by persons of all ages, and few are the houses in the city of Hanover that are not furnished with the Whitsuntide bouquet of lilies of the valley.

> And ye whose lowlier pride
> In sweet seclusion seems to shrink from view;
> You of the valley named, no longer hide
> Your blossoms meet to twine the brow of purest bride.
> BARTON.

The English gardens now possess several varieties of the lily of the valley, amongst which is the white with double flowers, the single and double red, and a variety with larger corollas that are variegated with purple. This latter kind is greatly esteemed in Paris, from whence it was first brought to this country; but as it does not increase so fast as the other varieties, it still remains more rare than we could wish to find it in the country in general.

[Abridged from PURSHES' *Flora Historica.*]

FRESH-WATER FISH.

II. THE SALMON, (*concluded.*)

SEVERAL of our English rivers were formerly celebrated for the excellent flavour of the salmon found in them, though in point of the number of the fish, they were probably always inferior to the rivers of Scotland. Sir Walter Scott regarded the possession of immense quantities of this rich and valuable fish as an advantage which nature has allotted to Scotland, as some compensation for the great inferiority of soil and climate to the sister kingdom: since where the earth is most sterile, the sea is often remarked to be most fruitful. Taken altogether, the British isles are held superior, with respect to their salmon fisheries, to any other land, though, as the progress of invention and manufacture advances, many of our streams are rendered obnoxious to the fish, and are almost deserted by them.

The accomplished author of *Salmonia*, or *Days of Fly-fishing*, had an opportunity of observing the state of most of the salmon rivers of the north of Europe. He fished in several of the Norwegian rivers, and found salmon in all of them; but those he took were small, and never exceeded a pound in weight. This was in the month of July; in August he visited Sweden, and fished in the magnificent Gotha, below the grand fall Trolhetta, which to see, he declares, is worth a voyage from England; but he never raised any fish there worth taking. Another river, called the Falkenstein, abounded with salmon of good size. He supposes the saw-mills of Norway to be the cause of the indifferent supply of salmon in that country, for the quantity of saw-dust which floats in the water must be destructive to the fish, by sometimes choking their gills and interfering with their respiration. In Germany, he never fished for salmon, for the Elbe and the Weser were too foul for fly-fishing, and in the Rhine, in Switzerland, and its tributary streams, he never saw a salmon rise. Among English rivers, he commends the Derwent, flowing from the beautiful lake of Keswick, the Hadder, at Whitwell, and the beautiful but scantily stocked river Avon. Small salmon are to be met with likewise in most of the considerable Welsh, Devonshire, and Cornish streams, and occasionally in the rivers of Northumberland. The Thames was formerly much praised for its salmon; and Walton tells us that, in his time, it was famous above all the other rivers of England, for the fine flavour of the salmon caught in it. At present, the taking of a salmon in the Thames is comparatively rare.

The most considerable salmon rivers, as we have already intimated, are in Scotland: the Tweed, the Tay, the Don, the Dee, and most of the streams along the coast, afford a good supply. The Irish rivers also are celebrated, especially the Erne, at Ballyshannon, the Moy, the Bann, the Blackwater, and the Shannon.

Notwitstanding large exportations of fish from Scotland, the supply was formerly so very abundant in that country, that a large well fed salmon, perhaps about twelve pounds, could be procured for sixpence; and domestics going to hire themselves, made an agreement with their masters, that they should not be fed on salmon more than three times a week. Forty or fifty years ago, the art of packing salmon in ice for the London markets was brought to perfection, and since that period the value of the fisheries has risen incalculably; the salmon have become dear in proportion; and the inhabitants of the counties through which salmon rivers flow, see them taken and packed up for the metropolis, by hundreds, without having it in their power to purchase a pound for their own tables. An inducement was held out for the practice of new modes of catching the fish, and great industry was exerted in a trade which had become so profitable. Had not a certain check been placed on these proceedings by the laws and regulations made for the preservation of the salmon tribe, we should probably, ere this, have lost

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the advantage of their visits to our rivers; and even as it is, they appear to be gradually deserting some of the southern rivers of Scotland where the supply was formerly very abundant.

The causes of this unwelcome desertion of their old haunts by the salmon, are still in operation, and it is confidently foretold by experienced anglers, that ere long, many of the once-famed salmon rivers will be destitute of this fish. In noticing the more prominent of these causes, we take the united testimony of Sir Humphry Davy and Sir Walter Scott, in saying that the change produced in the rivers and brooks of England and Scotland during the last twenty years, by the general system of drainage, has been a great cause of the diminution of fish in those streams. The moist, spongy, or peaty, soils which once composed a great part of the high lands of England, and the extensive morasses which covered the southern hills of Scotland, used to receive and retain, like sponges, the quantities of rain which fell upon them, and the moisture soaking from thence by slow degrees into rivulets and streamlets, was gradually transmitted to the main body of the river. Thus the rivers were slower in rising to flood, than they are at present, and slower in subsiding from that state; and their full and equable stream allowed the salmon, at almost all times, to pursue their course towards the upland sources. But now that the work of drainage has been so extensively carried on, the moisture is no longer retained in the same degree by a spongy soil, but being carried off by numerous channels to the principal stream, this latter becomes suddenly swollen, and rushes onward with a rapid current which forces the fish into pools and dams, and in its subsidence, which is also sudden, leaves them there, unable to ascend higher, and thus they are taken in great numbers. These remarks apply more especially to Scotland, but, in a limited degree, they describe the state of English rivers also. There is another way in which drainage is supposed to be injurious to the fishing interest. The food on which the salmon and other fish principally subsist, is lessened in quantity by that cause. Sir Humphry Davy says,

I attribute the change of the quantity of flies in rivers to the cultivation of the country. Most of the bogs or marshes which fed many considerable streams are drained; and the consequence is that they are more likely to be affected by severe droughts and great floods, the first killing, and the second washing away, the larvæ and aurelias.

In many cases, the system of drainage has been indiscriminately carried on, and its good results, even to the proprietor of the land, are extremely questionable. Judicious persons will, in time, be led to qualify its excess, and this will doubtless improve the state of the rivers, by restoring to them a more equable stream.

The other main cause of the deficiency of the salmon arises from moral circumstances, for which it is to be feared there is no remedy. The privilege of fishing for salmon does not necessarily follow the possession of land on one or both banks of a salmon river. The cases are numerous where the right of fishing in any particular part of the stream has been conferred by charters or royal grants on individuals who are neither owners nor occupiers of the land in the vicinity. By whatever means such right has been obtained, each proprietor is anxious to make the most of his part of the river, and is also much interested in the practices of those who occupy the portions above or below him. The proprietors of the upper part of the river receive great injury if the means employed in the lower fisheries are such as to prevent the ascent of the salmon to them; and the lower proprietors are equally aggrieved if the salmon are destroyed during the breeding season when they repair to the upper parts of the stream to deposit their spawn. Between the upper and lower proprietors, therefore, there should ever exist a good understanding as to their respective rights, and a careful maintenance of such regulations as are best adapted to secure the supply of fish; for each is so much concerned in the actions of his neighbour, that to look only to present individual interest is to ensure future individual and general loss. Owing to the great demand for salmon, and the improved methods of taking that favourite fish, there is, at the present time, a degree of activity and success in the means adopted in the lower fisheries, which has a considerable effect in intercepting the salmon in their progress from the sea to the upper parts of the river. This occasions the value of the upper fisheries to be greatly diminished, and, consequently, renders the upper proprietors indifferent to the preservation of the fish. During the whole breeding season, or close-time, it is ordained by law that the fish should remain undisturbed, and be allowed to ascend to the heads of the streams uninjured; and, as we have already stated, they are, at that time, unwholesome and unfit for food. These laws are enforced with very high penalties, and it might be supposed that the temptation to infringe them would not be great, considering the inferiority of the fish at that season. Yet we are told that the spawning fish are destroyed in the upper parts of the river.

We must now proceed to describe the various means employed for the capture of salmon, in the different parts of the river, during the legally established season, which, in Scotland, extends from the first of February to the fourteenth of September, Sundays excepted.

The *stake-net* affords the most advantageous means for taking salmon at the mouth of the river. This net was first introduced on the Solway, about a hundred years ago, and was called a "raise" or "rise" net. At first it was nearly in the form of a crescent, and was fastened to two stakes. It rose with the flow of the tide, and the salmon were taken only at the ebb. Improvements were afterwards made, which rendered it available during the flood as well as the ebb-tide. When stake-nets became general, they were found to be exceedingly advantageous in increasing the quantity of fish taken; and such was the success with which they were used, that as many as five hundred salmon and grilses have been secured in one of them, at the same time. These nets are not adapted for any other situation than the mouths of rivers, and are only used when the tide is always ebbing and flowing, the stakes being firmly driven into the rocky ground on the banks of the river. The nets are fixed between high and low-water mark, and do not interfere with the return of the fish from the upper streams. Salmon fresh from the sea are as often to be found in the shallow as in the deep water, but those which are descending from the spawning ground are weak and out of condition, and always keep the middle of the stream. There is another sort of net used on the coast, or the tideway of a river, but it is nearly superseded by the one just described. It is called a *stage-net*, and requires the constant attendance of fishermen, on the top of a stage or platform.

At a higher portion of the river the *coble-net* is used with much effect. The fishermen go out in flat-bottomed boats, called *cobles*, and get their chief supply from the pools of the river, to which the salmon freely resort. In dragging their nets along the bed of the river, or pool, they frequently rake up the spawning-bed, or injure the young fry, so that this mode of fishing is deemed injurious, besides taking the fish in a less perfect manner than by the stake-net. The salmon are frequently bruised in being dragged along in the net, and not being immediately packed in ice, are often inferior in flavour to those procured at the mouth of the stream.

Another method of taking salmon on a large scale for public consumption, is by means of an artificial space or dyke in the river, called a *cruive*. This cruive is formed of stones, projecting in such a manner, that the fish, in ascending the river, are led into them, and inclosed, as it were, in a trap. The cruive is considered as liable to

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abuse, since it can easily be formed in such a way as to prevent the ascent of the fish towards the stream head.

In *still-fishing*, as it is called, one end of the net is held by a man on the shore, another by a fisherman in his boat. As a fish approaches, it is surrounded by the net and pulled ashore.

A variety of other means are employed in the upper portion of the river, some of which can only be practised during flood-time, and others are common in ordinary fishing. We may mention one or two.

Burning the water, or *leistering*, is a common practice. A large number of nets are spread in every direction in the upper portion of the river, and one or two persons stand in a boat, with leisters in their hands. A third individual stands in the centre of the boat with a torch, generally composed of tarred rags. The moment a fish is discovered within reach he is struck.

The *halve-net* is a net fixed to the end of a pole, fourteen or sixteen feet in length. The fisherman carries the net on his shoulder to the river or frith, and placing it under water, waits the entrance of the fish.

Spearing is practised in nearly all our salmon rivers, but, as generally conducted, is considered illegal. The fish are speared late in the evening in their resting places, with a ten-pronged instrument.

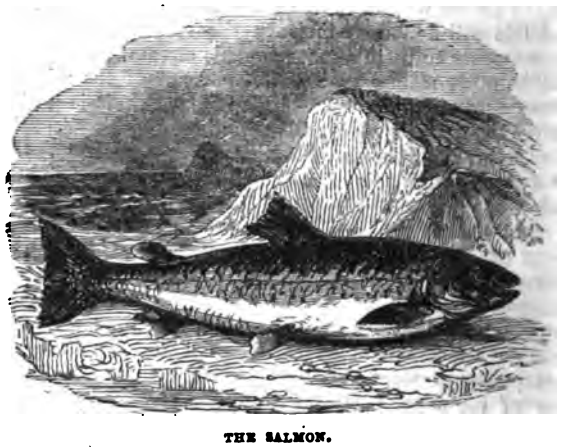
Within the last fifty years the transmission of salmon to all parts of the country, has been wonderfully facilitated by the plan of packing the fish in boxes with ice, and also by the improved means of conveyance throughout the kingdom. Before that period the supply of salmon in the London market was at all times scanty, and in warm weather had almost wholly ceased. It was packed in straw, and sent chiefly from the different salmon rivers of England. If anything occurred to delay the vessel, the fish was obliged to be boiled and pickled before it was sent off, and a supply of fresh-taken fish was put into the ship as it was on the point of sailing. At the present time, in addition to the advantages above mentioned, we have steamboats regularly arriving from all the great salmon rivers, bringing their cargo with nearly as much certainty and precision as a stage-coach would do, and allowing us to receive salmon in perfection, or rather in good condition, from a distance of five hundred miles. The produce of the fine rivers of Scotland is thus regularly conveyed to our markets, and the supply of salmon sent to London in one year alone (1835), amounted to 42,000 boxes, each box weighing on an average one hundred-weight. Even on a reduced estimate the quantity brought to market that season is said to have been 20,000 tons, or 4,480,000 pounds; which at ten-pence per pound would give 186,666*l.* The salmon are delivered to commission-agents, who charge five per cent., and take the risk of bad debts. This business is a lucrative one, and is in very few hands.

So long as seventy or eighty years ago, the value of salmon fisheries was very great, and in consequence of the great demand for this fish, it has gone on increasing. At the above period, as Pennant informs us, there were forty-one considerable fisheries on the river Tweed alone, extending upwards about fourteen miles from the mouth of the river, which were rented for about 5400*l.* per annum. The expenses attending the servant's wages, nets, boats, &c., amounted to 5000*l.* more, which, together made up the sum of 10,400*l.* Twenty times the sum of fish must have been caught to defray that expense, therefore, the salmon taken in the Tweed at that time must have been about 208,000 in one year. For the seven years preceding 1824, the rental of the Tweed fisheries averaged about 12,000*l.* One of the fisheries on the river Spey has been let at the enormous sum of 8000*l.* a year, and the expenses are supposed to have been 4000l. more.

We have scarcely mentioned the law respecting weekly close-time on salmon rivers, which forbids all fishing operations, as well as the existence of any obstacles to the ascent of the fish, from twelve o'clock at night on Saturday to the same hour on Sunday. Were it not for this short respite, the salmon would scarcely ever reach the upper streams of those rivers where such vigilant means are used to entrap them, and consequently the trade in such rivers would soon fail. Thus the interest of all parties, as well as the veneration due to the Sabbath, demand this time of rest. Sir Humphry Davy in his *Salmonia*, remarks on the strictness of the Scotch in their observance of the Sabbath, and introduces in his dialogue a discussion respecting the manner of passing the day in Protestant and Roman Catholic countries.

We cannot omit the opportunity of placing before our readers the admirable reasoning of Sir Walter Scott on this subject, who, in noticing the argument above alluded to, gives his own opinion in the following words:—

If we believe in the divine origin of the commandment, the Sabbath is instituted for the express purposes of religion. The time set apart is the "Sabbath of the Lord;" a day on which we are not to work our own works, or think our own thoughts. The precept is positive, and the purpose clear. For our eternal benefit a certain space of every week is appointed, which, sacred from all other avocations, save those imposed by necessity and mercy, is to be employed in religious duties. The Roman Catholic church, which lays so much force on observances merely ritual, may consistently suppose that the time claimed is more than sufficient for the occasion, and dismiss the peasants, when mass is over, to any game or gambol which fancy may dictate, leaving it with the priests to do on behalf of the congregation, what further is necessary for the working out of their salvation. But this is not Protestant doctrine, though it may be imitated by Protestant churches. He who has to accomplish his own salvation, must not carry to tennis-courts and skittle-grounds the train of reflections which ought necessarily to be excited by a serious discourse of religion. The religious part of the Sunday's exercise is not to be considered as a bitter medicine, the taste of which is as soon as possible to be removed by a bit of sugar. On the contrary, our demeanour through the rest of the day ought to be, not sullen certainly, or morose, but serious and tending to instruction. Give to the world one half of the Sunday, and you will find religion has no strong hold of the other. Pass the morning at church, and the evening, according to your taste or rank, in the cricket-field, or at the opera, and you will soon find thoughts of the evening hazards and bets intrude themselves on the sermon, and that recollections of the popular melodies interfere with the psalms. Religion is thus treated like Lear, to whom his ungrateful daughters first denied one half of his stipulated attendance! and then made it a question whether they should grant him any share of what remained.



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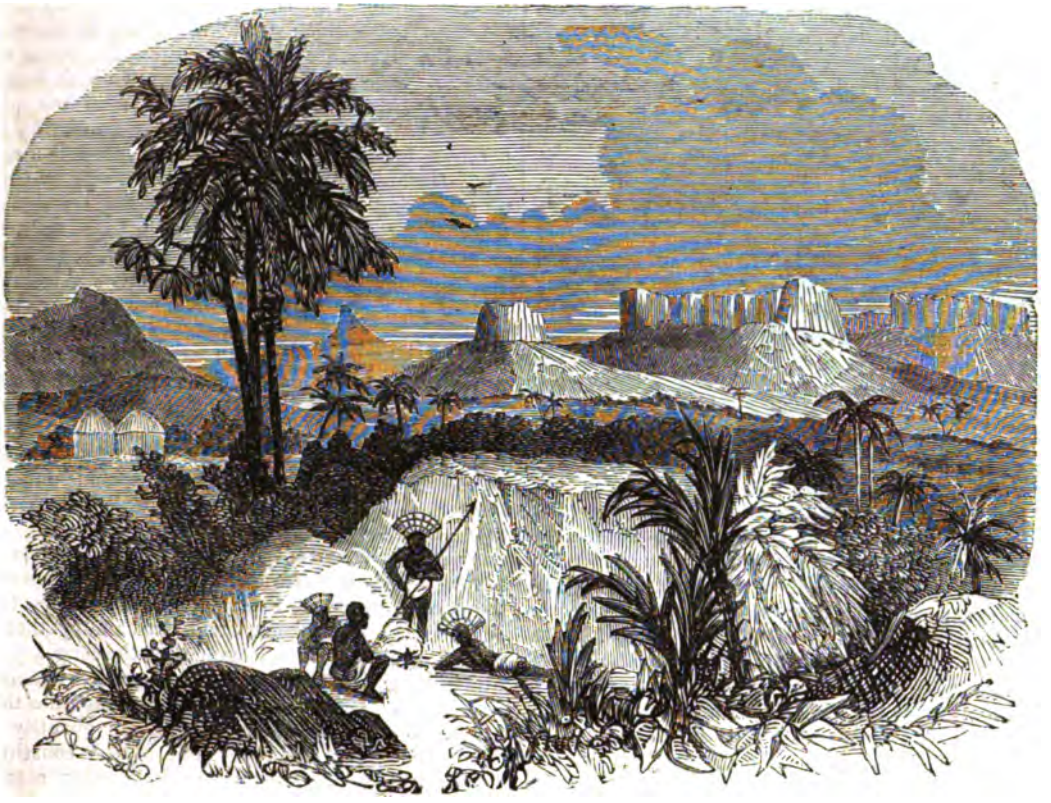

RANGES OF ROAINA MOUNTAINS, BRITISH GUYANA

I. A Short Account of Guyana in General.

It is curious to observe, on glancing at a map of Asia, Africa, or America, how many spots occur which are possessed, more or less completely, by European nations. Few circumstances are more indicative than this, of the power and civilization of the European states. The greater purity of ideas on matters of religion, the enterprising and industrious habits of the people, and the knowledge of the various arts and sciences diffused among them, all tend to bring about this state of affairs.

America once presented features such as these, to a very remarkable extent. Canada was claimed by France; the eastern portion of what now constitutes the United States, was an English colony; the immense country of Brazil was subject to Portugal; while nearly all the remainder of South America, as well as Mexico and Florida, were possessed by Spain. Great changes have, however, occurred in the political condition of these regions. England has lost the United States; Spain has lost her immense possessions; Portugal has lost Brazil; while the possession of Canada has been transferred from France to England. The general effect of these changes has been to render the whole of North America, southward of the great lakes and the river St. Laurence, independent of European control; and likewise the whole of South America, except a small country or region towards the north-east border.

The Canadian and Russian territories in North America, we do not propose to allude to farther here; but we wish to draw the reader's attention to the portion of South America just referred to, and which is called *Guyana*, *Guiana*, or *Guayana;* a region of which very little notice has been taken in our works on geography.

The upper part of South America is divided into great basins, by the rivers Orinoco and Amazon, both of which flow eastward into the Atlantic; and the name of Guyana used formerly to be given to the whole of the region between these two mighty rivers, a surface of country more than equal to three times that of France. But in recent times the name has been applied to a district not more than one sixth of this extent; because Brazil on the one hand, and the republic of Venezuela on the other, have appropriated more than five-sixths of the former Guyana. Even in its present limited extent, the boundaries of Guyana are but ill defined; but there seems to have been a sort of agreement to determine the limits by this arrangement:—that all that part of ancient Guyana which is drained by secondary rivers flowing into the Amazons, shall form part of Brazil:—that the portion which is drained by rivers falling into the Orinoco, shall form part of the republic of Venezuela; and that part only whose rivers flow at once into the Atlantic, shall continue to receive the name of Guyana. This limited district has a sea coast about four hundred miles in extent, from the eastern mouth of the Orinoco, to the river Oyapock.

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Yet this country, limited as it is compared with former times, is divided into three parts, owned respectively by the British, the Dutch, and the French; British Guyana being the most westerly, near the republic of Venezuela; French Guyana the most easterly, near Brazil; and Dutch Guyana between the other two. It is not possible, nor is it indeed of much importance at present, to determine how far inland the territory of Guyana extends; for scarcely an European foot has trodden any parts except those immediately contiguous to the coast. Until the Geographical Society employed Mr. Schomburghk, a few years ago, to explore the inland parts of British Guyana, the authorities knew but little, and attended to but little, except the towns established on the coast for commercial purposes; while the portions of Guyana belonging to the French and the Dutch are still less known.

The possessions of the three countries are separated from each other by rivers; and it seems to be understood that Guyana extends to the sources of these rivers, wherever they may be. Beginning from the east, we find French Guyana separated from Brazil by the river Oyapock, the extent of which is but little known. Then follows the river Marony, which serves as a boundary between French and Dutch Guyana: this is a considerable river, rising in the Sierra Acacay, and having, for a considerable distance from its mouth, an average width of a mile and a half. In the middle of the Dutch territory we meet with the river Surinam, which near its mouth, is about a mile in width, and is navigable for vessels of considerable size beyond the town of Paramaribo. On approaching the boundary between the Dutch and British possessions, we meet with the river Courantin, which has been better explored than those hitherto named. It has been ascended to a considerable distance towards its source, to a point where two fine cataracts occur, each nearly one hundred feet in height. As it is more than nine hundred feet wide at this point, the inference is drawn that the source of the river is much farther inland. From the cataracts the river runs north-east; and after presenting several rapids, becomes navigable at a distance of a hundred and fifty miles from the sea. For forty miles from the mouth its width is as much as one mile; near the mouth it is four miles; and at the estuary or actual mouth, ten miles.

Farther westward, in the British territory, is the river Demerara, whose length is known to be at least two hundred miles, and is supposed to be much more: as it affords an easy means of transport for goods, there are many settlements on its banks. Lastly, we may mention the river Essequibo, which traverses British Guyana, and which has been ascended to a distance of two hundred and thirty miles from its mouth. During its course it receives the river Rupernoony, more than two hundred miles in length; and afterwards another river, the Siparoony, whose source has not yet been ascertained. On approaching near its mouth, the Essequibo is farther augmented by the waters of the Mazaroony and the Cuyuni, two large rivers which unite about eight miles above their junction with the Essequibo. This last-named river contains, in different parts of its course, numerous rapids, and also many small rocky islands, and banks of mud and sand, which render the navigation somewhat dangerous. From the source of the Rupernoony to the mouth of the Essequibo, is a continuous water communication nearly five hundred miles in length.

All these rivers have a course more or less north-east, by which they empty themselves into the Atlantic, and divide Guyana into several sections. The country is farther divided into two sections by a hilly region running nearly parallel to the shore, and at a distance of from forty to seventy miles from it. Northward of this dividing belt is a flat low country, forming that which has alone been attended to by the nations who have established colonies there; while the district south of the mountain belt has been but little explored.

The low sea-girt land here alluded to, is nearly on a level with the sea at high water, and requires unremitting attention to the embankments and sluices necessary to keep out the sea. The greatest part of this low plain is covered with a soil of strong blue clay, highly impregnated with marine and vegetable salt, and with vegetable matter in a very divided state. The soil is very fertile, and thereby repays the outlay incurred for embankments and sluices. Other parts of the plain are open savannahs, that is, plains fit for pasturage, but not for farm cultivation; while some few districts distant from the rivers are unfit for cultivation, being without trees or shrubs, and entirely overgrown with fern.

The southern boundary of the maritime plain is formed of a range of hills, varying from fifty to two hundred feet in height; and then succeeds a series of more elevated plains, divided at intervals by ridges of hills running nearly parallel with the sea-shore. At different parts of these ridges are insulated hills, as well as elevated terraces, at heights of seven, nine, twelve, and fifteen hundred feet respectively. After passing several of these ranges of hills towards the south, we approach some extensive savannahs covered with grasses and plants; the winding courses of the river alone being marked by a border of trees. In some places the savannahs present a broad belt of good soil, but without any vegetation.

The general climate of Guyana may be indicated by saying that there are two rainy seasons and two dry seasons. One of the rainy seasons is longer than the other, and begins about the middle of April. At first the showers come only at intervals; but as the season advances they are more continuous, until at length, in the month of June, the rain pours down in torrents. It then gradually subsides, and ceases altogether by the end of August. Then commences the long dry season, which continues throughout September, October, and November. December and January constitute the short wet season, during which a moderate quantity of rain falls; and lastly, February and March constitute the short dry season. During the long rainy season, the rain often falls for several hours without ceasing; after which the remainder of the day is fine. Other times occur in which a few days will pass over without any rain falling. The heat is not so great as might be supposed from the almost equatorial situation (from about 2° to 8° N. latitude,) on account of the trade winds, which, passing over the whole breadth of the Atlantic from Africa to America, reach the coast of Guyana loaded with moisture, and the wind and moisture thus render the temperature of the air more supportable than it would otherwise be. There is likewise an alternation of land and sea-breezes, which,—as the sea-breezes are colder and blow in the day, and the land-breezes during the night,—contribute greatly to maintain an equable temperature. The thermometer seldom rises above 90°, or falls below 75°, so that the temperature throughout the whole year is such as we should term "summer heat." Thunder-storms, often violent but seldom very destructive, occur during the rainy seasons; the dreadful hurricanes of the West India islands being wholly unknown here.

It has been said that few countries on the surface of the globe can be compared with Guyana for vigour and luxuriance of vegetation, which shows itself especially in the great number of indigenous plants, and the large forest trees, which cover not less than one half of its surface. Many of the trees produce excellent timber; others are used for the making of furniture; such is the mahogany tree; or to furnish log-wood, while others are valuable on account of their fruit. Indian corn and rice are cultivated to such an extent, that three crops of

the former, and two of the latter, have been obtained in one year from some fertile pieces of ground. It was observed by Humboldt, and has since been confirmed by others, that wheat and similar grain do not succeed well in Guyana, since the altitude of the ground is too small; an intertropical latitude requiring a considerable elevation for the growth of these productions.

The territory of Guyana is inhabited by Europeans, African slaves, and native Americans. The Europeans went into this country as colonists, at different periods in past history; the Africans were, as in other and equally disgraceful instances, kidnapped from their houses and sold into slavery. The European settlers are principally descendants of the original Dutch colonists; the number of British and French being smaller. The native Americans of Guyana are, generally speaking, more civilized than the other aborigines of America. They cultivate Indian corn, Cassava, and some other roots; but they are still attached to a wandering life, and a slight inducement, or sometimes only fancy, leads them to abandon a well-cultivated piece of ground, and to remove to a wilderness, where they undergo much toil in rooting out the forest trees, and in preparing a new piece of ground. Some of these natives work for the European settlers as day-labourers. Their colour varies from that of a Spaniard or Italian, to a very dark copper hue.

These details relating to Guyana are to be taken as a whole, without reference to its division among the three European possessions. It was necessary to take this general view of the country, in order to understand the relation between the different Guyanas. But from this point we shall dismiss the Dutch and French settlements, and confine our attention to the British territory, which is indeed the only part of which much is known in this country. We will merely state in conclusion, that Dutch Guyana is frequently called Surinam, the capital being Paramaribo; and that French Guyana is called by them Cayenne, with a capital of the same name.

ON THE PLEASURE AND PROFIT ARISING FROM CULTIVATING PLANTS AND FLOWERS.

It was a saying of the celebrated Sterne, "that most people have their hobby-horse or amusements;" the literal meaning of which I take to be, that most people have their favorite pursuits or amusements; and so long as these pursuits are compatible with our duty to God as Christians, and militate not against the welfare of our fellow-men, so far are they innocent, rational, and profitable. Among all the various amusements which this fascinating world holds out, I think none is more innocent, more rational, or more profitable than the cultivation of flowers: those beautiful gems with which our divine Creator has studded our meadows, and kindly furnished to beautify our gardens; whose brilliant colours vie with the rainbow, and infinitely surpass the most costly tints, and whose balmy fragrance scents the surrounding atmosphere with perfumes more agreeable than the spices of Arabia! Who can behold their exquisite symmetry; who can admire their diversified yet splendid colours; or, who can feast his senses on the aromatic sweets which emanate from their beautiful blooms, without feeling a sort of sacred pleasure stealing imperceptibly into his very soul, and leading its finest feelings willing captives to their inimitable charms?

It is said, and very truly too, that the study of astronomy, that sublime science, which teaches the various revolutions of those spheres which nightly bespangle the nocturnal heavens, is admirably calculated to lead the mind from Nature up to Nature's God. And if the contemplation of those luminaries, placed as they are at such immeasurable distances; and which can act only upon the ocular nerves, has this tendency; how much more ought the beauties of Flora, producing as they do, a threefold evidence on the senses! Yes—

> The blushing tint, the crimson streak,
> The powers of heavenly wisdom speak;
> And all their balmy fragrance join,
> To show their Author is divine.

In fact, there is not a blade of grass, or a wild flower that decks our lawns, but which is replete with instruction, and shows forth the handy-work of the Great and glorious Creator of the universe.

> . . . . . Not a tree,
> A plant, a leaf, a blossom, but contains
> A folio volume. We may read, and read,
> And read again, and still find something new,—
> Something to please, and something to instruct,
> E'en in the noisome weed.—HURDIS.

Solomon, the wisest man, was a great admirer of the beauties of the floral kingdom. And our blessed Redeemer expressly commands us to "consider the lilies of the field;" and if, with an example like that of Solomon before us, and after receiving a command from our Saviour himself, we can still remain insensible to their charms—still refuse to contemplate their inimitable beauties, we must lack much of that spirit of refinement which purifies the grossness of depraved human nature, and makes man fit for the society of Heaven.

> . . . . . The men
> Whom nature's works can charm, with God himself
> Hold converse: grow familiar day by day,
> With his conceptions; act upon his plan;
> And form to his, the relish of their souls.——AKENSIDE.

Among all the productions of the vegetable kingdom, there is not a single individual but which has its uses; even those very tribes which daily remind us of man's awful fall, and the curse pronounced upon the earth for his sake; have in them properties of peculiar usefulness, and prove beneficial to the wants of man.—God hath made nothing in vain!—some are for use, others for ornament, and not a few, perhaps all, are possessed of medicinal properties. Properties! without which, life itself would be a burden; and which, if utterly deprived of, it would be utterly impossible for man to exist.

Since then, there is such innocent amusement, such rational pleasure, and such mental improvement in the cultivation of plants and flowers, and since it is so well calculated to enhance our spiritual interests, and render us more fitting for the society of beings of a higher order than ourselves, and especially for the society of our divine Maker, let me, for one, disdain more ignoble and trifling pursuits, let me fly from the deluded votaries of mere sensual gratifications, and in

> . . . . . The calm retreat!
> (Far from the noisy haunts of sordid men,)
> Where Flora trains her lovely offspring up,
> To captivate and charm! There let me muse!
> Surrounded by her rich and dazzling train,
> Till lost in ecstasy, my soul takes wing;
> And soars from nature up to nature's God!
> There may I lie, wrapped in the flowery vest
> Of silent rapture, till my soul breaks forth,
> And in the language of the immortal bard,
> Who sung the fatal fall—transported cries,
> "These are thy glorious works, Parent of good!
> To us invisible, or dimly seen
> In these thy lowest works; yet these declare
> Thy goodness beyond thought, and power divine!"
>
> [From HARRISON'S *Floricultural Cabinet.*]

A MIND, by knowing itself, and its own proper powers and virtues, becomes free and independent. It sees its hinderances and obstructions, and finds they are wholly from itself, and from opinions wrong conceived. The more it conquers in this respect, (be it in the least particular,) the more it is its own master, feels its own natural liberty, and congratulates with itself on its own advancement and prosperity.—SHAFTESBURY.

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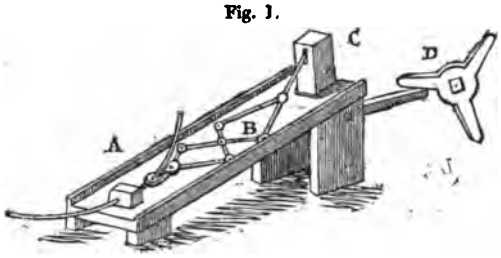
WIRE-DRAWING.

2. MANUFACTURING DETAILS.

Fig. 1.



IN our former article on this subject we gave a slight sketch of the wire-manufacture, from early times to the present. The mode of manufacture may now fittingly be brought under our notice.

In detailing the steps by which this branch of manufacture was improved in Germany, we had occasion to allude to Rudolph's invention. The machine by which he manufactured wire was similar to that represented in the annexed cut, fig. 1; in which A is an inclined plane, at the lower end of which is placed a drawing-plate, perforated with one or more holes; B is a jointed shank, terminating at the lower end in a pair of pincers, and at the other connected with a lever C; the tail-piece of this lever being so placed as to be pressed down by the arms of the rotating cam, D. By this means the pincers are drawn back, and the wire gradually forced, or rather pulled, through the holes in the drawing-plate, thus assuming the form and size of the hole through which it is made to pass.

On many parts of the Continent, most iron wire was, until the last few years, made by a machine somewhat resembling this. But there are many faults in wire thus produced; in the first place, every piece of wire exhibits, at intervals of a few inches, the marks of the pincers; and, in consequence of the wire being drawn by a succession of jerks, the surface becomes more or less unequal.

But by the improved modern processes, the wire acquires a surface and consistency almost mathematically uniform. Let us suppose that iron is the metal of which the wire is to be made. A square bar of iron is first worked into a cylinder, by being passed between rollers. These rollers are turned or cast with grooves on their peripheries, at right angles to the axes; the grooves being made of different sizes, so as gradually to reduce the bar to the required thickness. These rollers are made of hardened steel, and are generally about eight inches in diameter. When a pair of rollers, with corresponding grooves, are made to revolve three or four hundred times in a minute, a bar of steel, an inch square, and thirty inches long, is drawn from the heating furnace at a strong red heat, and placed in one of the grooves. By the aid of machinery it is speedily drawn through the largest groove. Being then introduced into the next sized groove it is further reduced in size; until, after having passed through eight grooves in about a minute, it is increased from two and a half to thirty or forty feet in length, and from a square to a cylindrical form. As the bar passes through any one of the grooves, it comes in contact with a third roller, so placed as to turn the end of the bar backwards, and drive it into the next smaller groove: the bar is thus performing a serpentine path backwards and forwards, between the rollers. The iron is thus reduced to the size of a sixth or eighth of an inch in diameter, and is then laid in coils, which are sold to the wire-drawer for farther reduction into wire of any required degree of fineness.

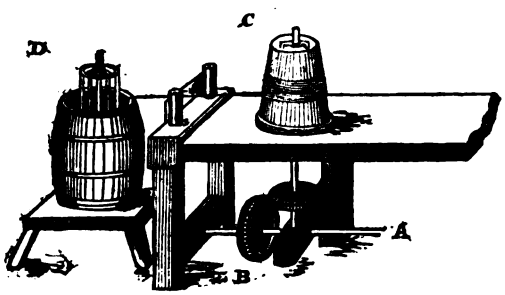
For some purposes the iron is prepared by *tilting* instead of *rolling*. A faggot of small bars is welded together by being heated, and then forged with a large tilt hammer, weighing a hundred pounds, and making one hundred and thirty strokes per minute. When an iron bar of proper quality is thus formed, it has to be worked into rods of a proper size for the wire-drawer; and for this purpose the workman heats six or eight inches of the end, and works it regularly under a smaller tilt hammer, weighing about fifty pounds, and making twenty strokes per minute. By a succession of strokes, and re-heatings, the iron becomes reduced to the proper diameter, and acquires greater tenacity or toughness than if prepared wholly by the rollers, a quality very advantageous for some purposes.

The square bar of iron being reduced to a cylindrical rod, the wire-drawer commences his operations. The drawing-plate, by which the thickness of the wire is determined, is generally a stout piece of the best shear steel, about six inches in length, an inch and a half in diameter, and with two opposite sides, one flat, and the other roundish. Numerous holes are punched, in a tapering form, so as to be larger at the flat than at the round side of the plate. This plate is set up in a vertical position, and a force is applied to draw the rod successively through the various sized holes. This force is either hand, steam, or water power, according to circumstances.

Supposing the power to be manual labour, the workman proceeds as follows:—The point of the rod, after being sharpened to some distance from the end, by hammering or filing, is inserted through the largest hole, and the drawing-plate is placed behind two stout iron pins on the work-bench. A pair of nippers, attached to a short chain, is made to grasp the point of the rod, and this chain, by means of a lever, is drawn back, so as to drag the rod a small distance through the hole in the plate. When a certain quantity is thus pulled through, the workman attaches it to the surface of a conical or cylindrical drum, placed vertically in front of the drawing-plate. This drum is made to revolve on a vertical axis by a lever springing horizontally from its upper end; and the workman sets this drum in rotation by walking round his low work-bench, and pushing the lever before him. The coil of rod or thick wire is held in one hand, the tapered end, after passing through the draw-plate, is attached to the drum, and the man, by forcing the drum to revolve, at once draws the wire through the hole in the plate, and winds it in a coil on the drum. When all the wire has been in this way pulled or drawn through one hole, the whole process is repeated with a hole of smaller diameter; and so on, until the wire has been reduced to the required thickness. When it becomes so fine that little power is required to draw it, the workman adopts an easier arrangement of machinery, and winds the wire on an iron cylinder, which has a lever capable of being moved round by hand, instead of requiring from the workman a circuit round his work-bench.

When the wire is drawn by steam, water, or horse power, instead of by manual labour, a somewhat different arrangement is adopted, as in the adjoining figure.

Fig. 2.



A is a horizontal shaft, set in rotation by the moving power supposed to be situated at the right hand of the

cut. A vertical bevel wheel, B, on this shaft, catches in the teeth of a horizontal wheel, connected with a vertical spindle, whereby the conical drum, C, fixed to the upper end of this spindle, is set in rotation. On a stool near the draw-bench is a tub, E, containing starch-water, or stale beer grounds, in which the wire, coiled upon the reel, D, is dipped, to remove the oxide that may adhere to the surface. Between the reel and the drum is seen the draw-plate, through holes in which the wire is drawn by the revolution of the drum. The reel is so placed in or on the cask as to be able to revolve as the wire is unwound from it. By a succession of drawings through holes of different sizes, the wire is at length reduced to the desired size.

The manufacture of the draw-plates has always been deemed a matter of great importance, since the too rapid abrasion of the edges of the holes would cause considerable inconvenience and loss to the manufacturer. The French pay particular attention to their plates, and produce them in the following manner. A band of iron is forged two inches broad and one inch thick; and about a foot in length is cut off and heated to redness in a charcoal fire. It is then beaten on one side with a hammer, so as to work the surface into furrows or groves, in order to aid the retention of a substance called *potin*, which is to be welded on one side of the iron. This potin is nothing but fragments of old cast-iron pots. These fragments are broken on an anvil, and mixed with pieces of white-wood charcoal. The mixture is put into the forge, and heated till melted into a kind of paste. Fusion and cooling are repeated ten or twelve times, by which the qualities of the cast-iron are changed, and made nearly analogous to those of steel; yet, so far from becoming brittle, it will yield to the blows of the hammer and the punch.

The bar of iron which is to make the draw-plate is covered with a layer of prepared potin, on the side which is furrowed, and the thickness of about half an inch. The whole is then wrapped up in a coarse cloth, which has been dipped in clay and water, and then put into the forge. The potin is more fusible than the forged iron, and melts more quickly: during this fusion the plate is withdrawn from the fire occasionally, and the potin is gently hammered, to make it melt and amalgamate with the iron. This process of heating and hammering is frequently repeated, to render the union more perfect.

The union being effected, the plate is again heated and forged by two men, by which it is expanded to the dimensions required. Cast-iron, when used alone, cannot be forged; but, in the present instance, the alloy of cast with wrought-iron, and the repeated fusion with charcoal, give to the plate the property of malleability. While the plate is still hot, the holes are pierced. This is effected with a well-pointed punch of German steel, applied on that side of the plate which was not covered with potin. The plate requires to be heated four times in the fire before the punching is effected; and at every heating a finer punch is employed, so as to produce a taper hole. The holes are not punched quite through by the plate-makers; but the wire-drawers, when the plate is quite cold, finish the piercing by means of sharp tools, and give to the holes what size they please. Each plate is pierced with a great number of holes, all of which are conical, the apex of the cone being on that side of the plate which was coated with potin, and which is harder than the other. In some manufactories the draw-plates are made of common hardened steel, without the peculiar preparation here described.

During the process of reducing the size of wire, by drawing through a series of holes decreasing in diameter, the iron or other metal is liable to become very stiff and hard, and requires to be repeatedly softened. The iron is heated red-hot in a closed furnace, and then placed in a vessel containing acid liquor: this immersion causes the scale produced by the heating to come off, on the wire being afterwards laid in stale-wort, or the grounds of ale, and then well scoured.

The different metals require somewhat different modes of treatment, during their reduction to the form of wire; but the above details will convey a general idea of the processes.

The quantity of wire used in our manufactures is enormous. Besides the strings of musical instruments, pins, and needles, and countless other small wares, the cards for the cotton manufacture consume a very large quantity. These cards are strips of leather covered with small wires; and Professor Barlow has adduced a remarkable proof of the quantity of wire used for making these cards. Machines have been invented, by the action of which the wires are cut, prepared, and fixed in the leather, at the rate of 130 per minute; and considering a working-day to consist of eleven hours, 85,800 inches of wire are worked up by each machine. There are one hundred of these machines in the manufactory of Mr. Dyer of Manchester; and these machines will therefore work up 8,850,000 inches of wire per day, or to the amount of about thirteen miles and a half in length.

MEMORY.

Say whence the charm that those sweet scenes impart,
To raise at once, and to subdue the heart—
To paint sweet fiction in the hues of light,
And lead the mind through ages wrapt in night!
Whence the soft power that speaks alike to all,
And binds the sternest in her thrilling thrall!
'Tis thine, dear Memory, thus to fill the soul,—
Thus o'er the heart to exercise control,—
To wrest from time some portion of his prey,
Breathe life in dust, and animate decay!

No joy we boast, but which the coming hour
May whelm in sorrow, or with pain o'erpower.
Still former scenes sweet recollection claims—
Still burn the embers of our former flames—
Still every cloud fond memory tints with light,
And gilds with stars the mind's obscurest night;
O'er life's rude storms a rainbow hue she casts,—
Her's is the beam that every cloud outlasts.

Thus, when the traveller quits his native shore,
The scenes he leaves seemed ne'er so dear before;
As less and less its fading traces grow,
His heart is grieved with unavailing woe—
His anxious eye he strains across the main,
To view those native, long-loved scenes again.
So by thy light, sweet Memory, we survey
Youth's hours of bliss, and childhood's happier day—
So once again, while tears the eyes bedew,
Reflected in thy glass these scenes we view.
Sweet childhood! still we mourn those halcyon hours
When guileless peace and innocence were ours—
When every change could only add to joy,
Which neither woe could blight, nor care destroy!
When life was sweet, and every sorrow feigned,
The elastic mind defied, and soul disdained;
When all was pure as Eden's lovely bowers,
And every smiling path was strewn with flowers.
Delightful days! alas, ye blushed to fade—
Your bloom 'neath sorrow's blighting breath decayed;
The flower which smiles amid the summer gales,
When autumn blows, its short-lived lustre fails;
The leaf that spring beholds so bright and green,
A few short months, and sad and sear 'tis seen:
The opening buds that brightly meet the morn,
Oft from their stem by evening blasts are torn:
So does keen anguish smite the woe-worn brow,
And grief its empire is maintaining now.
And must the withered leaf alone be here!
Must every smile be followed by a tear!
No! still that eye one kindling spark relumes—
Its wonted fires it once again resumes:
As the warm brilliance of the sunbeam shines,
And melts the snow that crowns the Apennines—
Thus lights the heart sweet Memory's genial ray,
Thus gilds its woes, and smiles its cares away. T. A.

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GARDEN HERBS.

WORMWOOD.

COMMON Wormwood, (*Artemisia absinthium*), is a perennial herb, growing wild in many parts of Great Britain; but also cultivated for medicinal purposes. Many species of Artemisia are reared in gardens, but their virtues were never less called into action than at present. A favourite plant of this family is the Southernwood (*Artemisia abrotanum*), seldom absent from the cottager's garden, where it is known by one of its common names, *old man*, *maid's delight*, &c. This aromatic herb is of a shrubby habit, growing to the height of three or four feet, but seldom producing flowers in this country. In warmer climates it puts forth an abundance of small yellow blossoms. It will exist in the densest parts of a crowded city, where the rays of the sun seldom visit it, and where the air is very impure. It was formerly used in medicine; and the tincture it affords, being employed in the form of a lotion or ointment, is said to remove cutaneous eruptions, and also to prevent the hair from falling off. The woody part of this plant yields a yellow dye. We must pass by the other species, and confine our remarks to the subject of the present article.

The root of the common wormwood is branched and woody; the stems rise to two or three feet, are branching, angular, and furrowed. The lower leaves are bipinnate; the upper digitate with oblong, obtuse, very entire segments. The flowers are pedicellated, nodding, hemispherical, and of a brownish-yellow colour. The florets of the disk are numerous, but those of the ray few; and the receptacle is covered with white silky hairs, shorter than the calyx. The botanist will recognise it from the above description, as belonging to the natural order *Compositæ*; in which it is a member of the *Corymbiferous* tribe.

The generic name of this plant is said to have been conferred by Queen *Artemisia*, a Carian princess, who adopted the plant, and changed the appellation from *Parthenis* to that of her own name. The knowledge and use of this herb is of high antiquity. The Egyptians made great use of it in their worship of Isis. Branches of it were carried by the priests of this goddess in their solemn and religious processions, when they recited in verse the arts which had been taught by this deity. The Romans also made use of wormwood in their solemnities and sacrifices, particularly during the festival called Latinæ; when those who gained the prize in the chariot race and other games, had the decoction of this herb presented to them to drink; which honourable reward was devised, according to Pliny, to secure the good health of the victorious charioteer, seeing that his success had rendered him worthy of long life.

The bitterness of this herb has been noticed in the sacred Scriptures; and we find wormwood mentioned, in a figurative manner, to express that "evil and bitter thing," the departure from God, and from his commandments; and also to represent the woe consequent thereon. We quote a few passages:—

Lest there should be among you man, or woman, or family, or tribe, whose heart turneth away this day to go and serve the gods of these nations; lest there should be among you a root that beareth gall and wormwood.—Deuteronomy xxix. 18.

Ye, who turn judgment into wormwood, and leave off righteousness in the earth.—Amos v. 7.

And the Lord saith, Because they have forsaken my law which I set before them, and have not obeyed my voice, neither walked therein; but have walked after the imagination of their own heart and after Baalim, which their fathers taught them. Therefore I will feed them, even this people, with wormwood, and give them water of gall to drink.—Jeremiah ix. 13, 14, 15.

The nauseous flavour of wormwood has caused it to be nearly discarded from modern use, although it is one of our most powerful bitters. Its bitterness is derived from what is usually called extractive matter, and is retained by the decoction after long boiling. A pound of the herb yields about five ounces of this extract. The taste of the Romans must have been extremely different from ours, or they must have had such a supreme regard for their health as to take willingly what was repugnant to them, for Pliny tells us, that wormwood was, in his days, a common drink among the people, and held in high esteem. It was considered astringent and diuretic, and was said to prevent sea-sickness, and to create appetite. It was also given as a remedy for jaundice, mixed with honey and nitre for the cure of the quinsy; and as a fomentation for chilblains. The smell of the herb was thought to procure sleep to invalids. The ancients also put it into their ink to prevent mice from eating their writings; laid it in wardrobes to preserve their garments from the moth; and burnt it to drive away gnats. The ashes of the plant were mixed with oil of roses, and used to blacken the hair of the head.

All the old writers agree in saying, that the species of wormwood which grows on the sea-coast is very advantageous to cattle, and that sheep in particular, when fed on it, fatten very rapidly. "As we all know," says Philips, "that the feeding on savoury herbs gives a relish to the flesh of animals, it is worthy the trial of those, who feed flocks on the coast, to sow a plot with this hardy plant. It may be raised upon any soil, either by seeds or slips in March, and the seeds ripen in August."

Wormwood is sometimes spoken of as an antispasmodic, and the olden writers extol it as a vermifuge; but it deserves little attention at the present day in either of these characters. The French are fond of it, and spoil some of their excellent *liqueurs* with its flavour. The beverage, called *eau d'absinthe*, employed by gourmands to increase their appetite, is prepared from this plant, by the addition of alcohol, and subsequent distillation. Some of our publicans sell a liquor, called *purl*, which is said to be all seasoned with the tops of wormwood.

This herb should be gathered when in seed, as that is the time when its virtues most abound. Dr. Lewis thought, that the roots might be applied to some useful purpose; their virtue resides chiefly in the cortical part; and rectified spirits extract their flavour better than watery liquors. The oil of wormwood being rubbed on furniture, is said to prevent the attacks of insects. This oil is obtained by distillation, one hundred weight of the fresh herb yielding upon an average four ounces.

Before the hop had become so well known and highly prized, great use was made of wormwood in the composition of beer. When properly managed, the flavour given to malt liquor by this herb is said to be nearly equal to that of hops, and has been by some persons even preferred. For this purpose the plant is gathered when in seed, and hung up in small bundles to dry. When thoroughly dried, a certain quantity of good strong malt liquor is to be impregnated with it. This is set by for use, to add to the beer when brewed; agreeably to the taste, or the time it is required to be kept. This method is mentioned in the *Philosophical Transactions*, and it is also added, that the wormwood intended for this purpose should have its seeds carefully preserved in drying, and it is best when not used till the year after it is gathered. Perhaps it was from the above use of wormwood in the preservation of ale that a common species (*Artemisia vulgaris*) obtained the name of *Mugwort*. This species was also formerly called *Cingulum Sancti Johanni*, because it was foolishly imagined, that if a crown was made of this herb and worn upon the eve of St. John, (a time when many other superstitions were practised,) it would secure the person who should wear it and afterwards throw it into the fire, uttering certain words, from all diseases and misfortunes.

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for the following year. Mugwort was also suspended over the doors of houses, to prevent evil from happening to the inhabitants; it was worn by travellers to save them from weariness during their journey; and was said to purify even a pestilental air. For this latter notion there seems some ground, since we are told by Philips, that a gentleman at the bar, to whom he recommended it, assured him that he had experienced its reviving qualities in heated courts, as being nearly equal to a change of air. Some persons are of opinion that the fabulous and superstitious notions concerning this plant, all took their origin in virtues which really exist in it; and that the custom of travellers to provide themselves with this herb arose from the relief it affords when used to bathe the feet that are weakened or galled by over exertion. The testimony of our modern Pharmacopœias is, however, different from this; for it is expressly stated that as an external application, infusion of wormwood has no advantage over warm water.

There is a sort of wormwood, common in China, which furnishes the *moxa* used by them as a cautery. This is a soft woolly substance, prepared from the young leaves of the plant by beating them when thoroughly dried, and rubbing them in the hands till the fine fibres only are left. A little cone of this substance is laid on a diseased part, previously moistened, and is then set on fire at the top. It thus burns slowly down, producing a dark spot on the skin, which ultimately sloughs and produces a scar. This mode of treatment is much used in Eastern countries.

Culpeper devotes a long astrological essay to the subject of wormwood, and is more than usually droll. We give a few extracts from him, as tending to illustrate the state of knowledge of the time in which he wrote.

I would willingly teach astrologers and make them physicians, if I knew how, for they are most fitting for the calling: if you will not believe me, ask Dr. Hippocrates and Dr. Galen, a couple of gentlemen that our College of Physicians keep to vapour with, not to follow. In this herb I shall give the pattern of a ruler, the sons of art rough cast, yet as near the truth as the men of Benjamin could throw a stone; whereby my brethren, the astrologers, know by a penny how a shilling is coined. As for the College of Physicians, they are too stately to learn, and too proud to continue. They say a mouse is under the dominion of the Moon, and that is the reason that it feeds in the night; the house of the Moon is Cancer; rats are of the same nature with mice, only they are a little bigger; Mars receives his fall in Cancer, *ergo*, wormwood being an herb of Mars, is a present remedy for the biting of rats and mice.

Wheals, pushes, black and blue spots coming either by bruises or beatings, wormwood, an herb of Mars, helps, because Mars (as bad as you love him, and as you hate him) will not break your head, but will give you a plaister. If he do but teach you to know yourselves, his courtesy is greater than his discourtesy.

Culpeper winds up his Essay thus:—

He that reads this and understands what he reads, hath a jewel of more worth than a diamond: he that understands it not, is as little fit to give physic. There lies a key in these words which will unlock (if it be turned by a wise hand) the cabinet of physic. I have delivered it as plain as I durst; it is not only upon wormwood as I wrote, but upon all plants, trees, and herbs; he that understands it not, is unfit, in my opinion, to give physic. This shall live when I am dead; and thus I leave it to the world, not caring a farthing whether they like or dislike it. The grave equals all men, and therefore shall equal me with all princes; until which time the eternal Providence is over me; then the ill tongue of a prating fellow, or one that hath more tongue than wit, or more proud than honest, shall never trouble me. Wisdom is justified by her children. And so much for wormwood.

Wit loses its respect with the good when seen in company with malice; and to smile at the jest which plants a thorn in another's breast, is to become a principal in the mischief.—Sheridan.

SOLUBLE GLASS.

Several ancient writers speak of a Roman architect who discovered the means of so far altering the nature of glass as to render it *malleable;* but the Emperor Tiberius, fearing lest the value of gold might be lowered by the discovery, caused the architect to be beheaded, and thus his secret died with him. A similar discovery is said to have been made in France, in the reign of Louis the Thirteenth. The inventor presented a bust formed of *malleable* glass to the Cardinal Richelieu, and was rewarded for his ingenuity by perpetual imprisonment, lest the French glass manufacturers should be injured by the discovery. In our own day a description of glass, perhaps more remarkable, and certainly far more useful than *malleable* glass, has been discovered by M. Fuchs, the curious properties and important applications of which we propose briefly to notice.

Soluble glass is a union of silica and an alkali which has, in addition to some of the properties of common glass, the property of dissolving in boiling water. The preparation of soluble glass does not greatly differ in its early stages from that of common glass, an account of the manufacture of which will be found in the third volume of this work, to which we refer the reader.

When sand and carbonate of potash are heated together, the carbonic acid is not entirely driven off, unless the sand be in excess, but the whole of the gas may be expelled by the addition of powdered charcoal to the mixture.

Carbonate of potash and pure sand being taken in the proportion of two to three, four parts of charcoal are added to every ten parts of potash and fifteen of sand. The charcoal accelerates the fusion of the glass, and separates from it all the carbonic acid, a small quantity of which would otherwise remain, and exert an injurious effect. In other respects the same precautions that are employed in the manufacture of common glass are to be observed. The materials must first be well mixed, then fritted, and finally melted at a high heat, until a liquid and homogeneous mass be obtained. This is removed by means of an iron ladle, and the glass pot filled with fresh frit.

The crude glass thus obtained is usually full of bubbles: it is as hard as common glass: it is of a blackish gray, and more or less transparent at the edges. Sometimes it has a whitish colour, and at others is yellowish or reddish, indicating thereby that the quantity of charcoal has been too small. Exposed to the air for several weeks, it undergoes slight changes, which tend rather to improve than injure its qualities. It attracts a little moisture from the air, which slowly penetrates its mass without changing its aggregation or appearance, except that it cracks, and a slight efflorescence appears at its surface. If after this it be exposed to heat, it swells up, owing to the escape of the moisture it has absorbed.

In order to prepare the glass for solution in water it must be reduced to powder by stampers. One part of the glass requires from four to five of water for its solution. The water is first boiled in an open vessel, the powdered glass is added gradually, and is continually stirred, to prevent its adhesion to the vessel. The boiling must be continued for three or four hours, until no more glass is dissolved. If the boiling be checked before the liquor has thus attained the proper degree of concentration, carbonic acid will be absorbed by the potash from the air, and produce an injurious effect. When the solution has acquired the consistence of syrup, and a density of 1·24, it is fit for use. It is then allowed to repose, in order that the insoluble parts may be deposited: while it is cooling a film forms on the surface, which after some time disappears, or may be dissolved by depressing it in the liquor.

Soluble glass being employed only in the liquid state, it is preserved for use in solution. No particular care is necessary to preserve the liquid, as, even after a long

space of time, it undergoes no perceptible change, if the solution have been properly prepared. The only precaution is not to allow too free an access of air to it.

Soluble glass may be prepared by using carbonate of soda, instead of that of potash. This glass has the same properties as the other, but is more valuable in its applications. The solutions of these two kinds of glass may be mixed in any proportion, and the mixture is sometimes more useful than either of the solutions separately.

The solution of soluble glass is viscid, and when concentrated becomes turbid or opalescent. The solution unites with water in all proportions. At a density of 1·28 it contains nearly 28 per cent of glass, and if the concentration be carried beyond this point, it becomes so viscid that it may be drawn out in threads like molten glass. When the solution is applied to other bodies, it dries rapidly in the air, and forms a coat like a varnish; a property which leads us to notice some of the numerous and varied applications of this curious preparation.

It is well known that all sorts of vegetable matter, such as wood, cotton, hemp, linen, paper, &c., are combustible, but in order to burn them, two conditions are necessary,—an elevated temperature, and free access of air to supply the oxygen necessary to their conversion into water and carbonic acid. When once inflamed their own combustion supplies the heat necessary to the chemical action, provided they be in contact with the air. If deprived of such contact, and made red-hot, they will yield inflammable volatile products, but the residual carbon will not burn, because deprived of air; and thus the combustion will cease of itself. Such is the property of all the fixed fusible salts, if they be composed of substances incapable of yielding their oxygen at a low red heat, either to carbon or hydrogen. Such salts melt as the vegetable matter becomes heated: they form upon it a coating impermeable by air, and either prevent or limit the combustion. The phosphate and borate of ammonia have such a character, but they are so readily soluble in cold water as to be liable to objections which are not found in soluble glass. This last-named substance forms a solid and durable coating, which suffers no change by exposure to the air (since soluble glass possesses the valuable property of being almost entirely unaffected by cold water): it does not involve any great expense, and is easy of application. But in order that it may not fail, particular care must be taken, both in preparing and employing it. To cover wood and other bodies with it the solution must be made of a pure glass, otherwise it would effloresce and fall off. But still a slight degree of impurity is not injurious, although after a few days a slight efflorescence will appear: this may be washed off by water, and will not occur a second time. When a durable coating is to be applied to wood, the first solution must not be too strong, for if it be it will not be absorbed: it will not displace the air from the pores, and consequently will not adhere strongly. A more concentrated solution may be employed for the after-coats, but each coat must be dry before another is applied, and the drying, in the most favourable weather, will occupy at least twenty-four hours. When the glass is made with potash the coating is liable to crack: this defect does not apply to glass made with soda.

Although soluble glass is of itself a good preservative from fire, yet it fulfils the object better when mixed with incombustible powders, such as those procured from clay, whiting, calcined bones, powdered glass, &c. In applying soluble glass to the woodwork of a public building at Munich ten per cent of yellow clay or yellow earth was added. After six months the coating had suffered but little change: it was damaged only in a few places where it had need of some repair. This arose from the very short time allowed for the preparation and application of the glass.

None of the methods hitherto proposed for making cloth fire-proof appear so advantageous as the application of soluble glass, for it does not act upon vegetable matter, and completely closes the spaces between the threads: it fixes itself into the web in such a way that it cannot be separated, and increases the durability of the fabric. The firmness which it gives to stuffs does not injure them for use as curtains, because it does not prevent them from being rolled easily. The application of soluble glass to cloths is not a difficult operation, but still it is not so easy as might at first be supposed. It is not sufficient to coat or dip them in the solution: they still require after this operation to be subjected to pressure. M. Dumas suggests that this object might perhaps be best attained by passing them between rollers plunged in the solution. When a cloth is only coated with soluble glass, and put into the fire, it will remain incandescent after it is taken out. This is not the case when it has been properly impregnated with the solution. A still better purpose is answered in this case, when litharge has been added to the solution: the stuff in drying yields to the shrinking of the mixture, and becomes inseparable from it, which is the reverse of what happens when applied to wood. A single part of litharge in fine powder is sufficient for fourteen parts of concentrated liquor.

Soluble glass is capable of many other applications, and particularly as a cement: for this purpose it is superior to all those which have hitherto been employed for uniting broken glass, porcelain, &c. It may be used instead of glue or isinglass in applying colours, although when employed by itself it does not make a varnish capable of preserving its transparency when in contact with air.

A PROUD man is a fool in fermentation, that swells and boils over like a porridge-pot. He sets out his feathers like an owl, to swell and seem bigger than he is. He is troubled with a tumour and inflammation of self-conceit, that renders every part of him stiff and uneasy. He commits idolatry to himself, and worships his own image; though there is no soul living of his church but himself, yet he believes as the church believes, and maintains his faith with the obstinacy of a fanatic. He is his own favourite, and advances himself not only above his merit, but all mankind; is both Damon and Pythias to his own dear self, and values his crony above his soul. He gives place to no man but himself, and that with very great distance to all others, whom he esteems not worthy to approach him. He believes whatever he has receives a value in being his; as a horse in a nobleman's stable will bear a greater price than in a common market. He is so proud, that he is as hard to be acquainted with himself as with others; for he is very apt to forget who he is, and knows himself only superficially; therefore he treats himself civilly as a stranger, with ceremony and compliment, but admits of no privacy. He strives to look bigger than himself, as well as others; and is no better than a parasite and flatterer. A little flood will make a shallow torrent swell above its banks, and rage, and foam, and yield a roaring noise, while a deep silent stream glides quietly on; so a vain-glorious, insolent, proud man, swells with a little frail prosperity, grows big and loud, and overflows his bounds, and when he sinks, leaves mud and dirt behind him. His carriage is as glorious and haughty, as if he were advanced upon men's shoulders, or tumbled over their heads like Knipperdolling. He fancies himself a Colosse; and so he is, for his head holds no proportion to his body, and his foundation is lesser than his upper stories. We can naturally take no view of ourselves, unless we look downwards, to teach us what humble admirers we ought to be of our own value. The slighter and less solid his materials are, the more room they take up, and make him swell the bigger; as feathers and cotton will stuff cushions better than things of more close and solid parts.—BUTLER.

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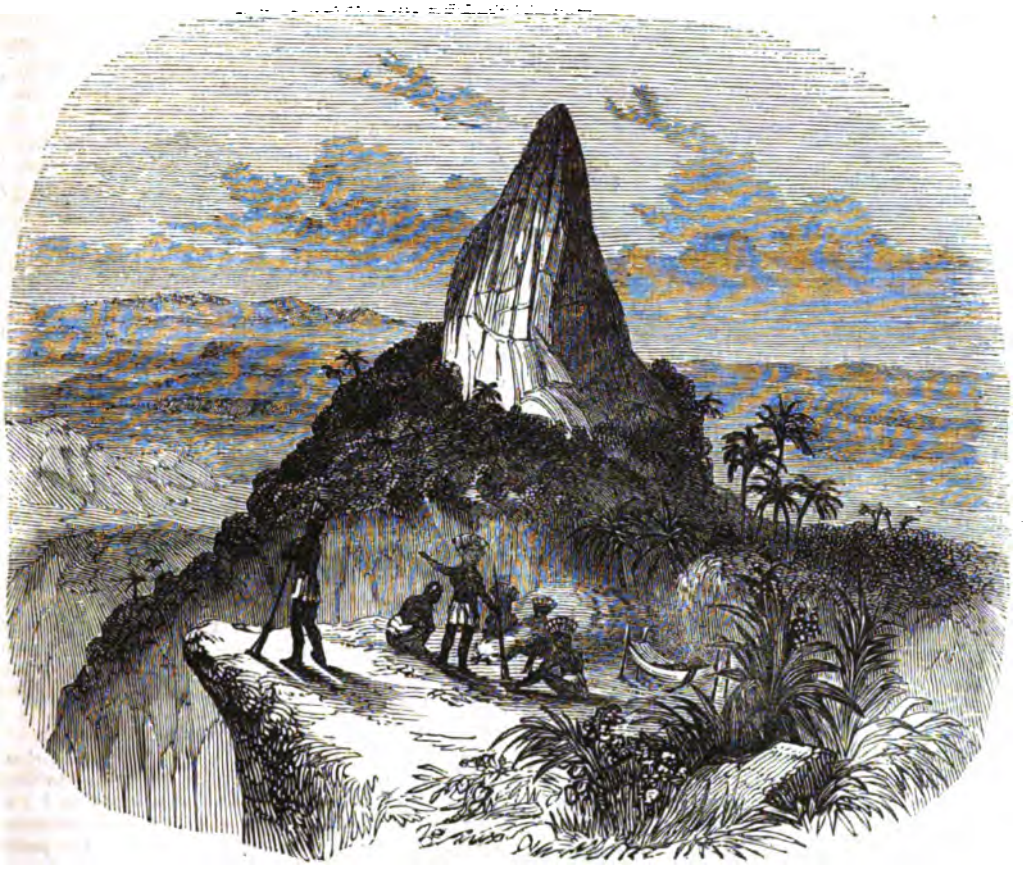
BRITISH GUYANA



MOUNTAIN OF ATARAIPU.

II. History of British Guyana.

We must now endeavour to give a sketch of the history of British Guyana, in order to show the steps by which the British became possessed of land in this quarter.

In the year 1580 the Dutch attempted to form settlements along this coast, on the banks of the great rivers, and they established a factory or station, called *Nieuw Zealand* at the mouth of the Pomeroon, with liberty from the States General of Holland to establish a trade there. The Spaniards, who possessed the neighbouring territory, viewed these proceedings with jealousy, and, aided by the natives, drove the Dutch from their settlement. The leader of the latter party, however, an enterprising man, named Joost Van Den Hoog, succeeded in gaining possession of a small island at the confluence of the rivers Massaroony and Cuyuni. A few years afterwards Jan Van Peere, a native of Flushing, made another attempt at colonizing, and after a few skirmishes with the Spaniards, established a party on the territory between the Berbice and Courantin rivers, where they were supplied by the Dutch government with slaves from Africa.

About the middle of the following century Charles the Second made over to Lord Willoughby, governor of Barbadoes, the whole of this territory, although really possessed by the Dutch. The earl named it Surreyham, in honour of the earl of Surrey, a name afterwards altered to Surinam. We find, however, that such arrangements were subsequently made as confirmed the possession to the Dutch. In the wars which ensued, the colony was attacked and taken,—sometimes by the English, and sometimes by the French,—but re-captured by the Dutch. Towards the latter end of the century the colony was transferred to the Dutch West India Company, and the Government at home contracted to supply slaves from Africa at the rate of 250*l.* each! Such was the light in which traffic in human beings was regarded at that time.

In 1720 the proprietors of the colony, not having a sufficient capital for the cultivation of lands, made certain commercial arrangements in respect of shares, by which money was raised, and the farther improvement of the colony insured. Twenty years afterwards the settlers on the Essequibo, thinking that the low lands near the coast would be more advantageous, obtained permission to form a colony on the banks of the Deme-

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rara, which they effected. The island of Borsden was named the seat of government; but Stobroek, now George Town, at the east point of the mouth of the river, afterwards superseded it.

From 1781 to 1814 a repeated series of changes took place in the possession of the colony, arising out of the hostilities between England, France, and Holland, the result of which was, that all that part of Guyana west of the river Courantin became the property of the British, the colony of Surinam remaining in the hands of the Dutch. The British territory comprised the colonies of Demerara, Essequibo, and Berbice, all three of which were, in 1831, united into one colony, called British Guyana, in which form it still remains.

British Guyana is now under a governor-general and commander-in-chief, who includes in the same government the islands of St. Lucia and Trinidad. The actual administration of affairs is in the hands of a lieutenant-governor, who resides in George Town, Demerara, assisted by a legislative council, including the chief-justice, high-sheriff, attorney-general, and ten other persons. Justice is administered by three chief-justices and four puisne judges in Demerara and Essequibo, and one puisne judge in Berbice. There are, besides, six "protectors of Indians," whose offices correspond to this designation, and also sixteen special justices, who were appointed on the passing of the act for the emancipation of the slaves, in 1834, and whose duty it is to watch over the execution of the law on behalf of the apprenticed slaves.

The population of the colony is nearly as follows,—or rather was so a short time previous to the commencement of the operation of the emancipation act. In Essequibo and Demerara, whites, three thousand; free coloured population, six to seven thousand; slaves, seventy thousand. In Berbice, whites, six hundred; free coloured people seventeen hundred; slaves, twenty thousand,—making, therefore, for the whole colony, about three thousand six hundred whites, seven or eight thousand free coloured, and ninety thousand slaves. The number of the negroes in respect of whom compensation was awarded, under the provisions of the emancipation act, was 69,579, and the portion of the twenty millions sterling, so nobly awarded by the British nation as the purchase-money for negro freedom, which was paid in respect of British Guyana amounted to 4,268,809*l.*

The towns of British Guyana are few. New Amsterdam, the capital of Berbice, was commenced building in 1796; the position of the former town Old Amsterdam, which was higher up the river Berbice, being found inconvenient. It is situated on the east bank of the Berbice, immediately above the junction with the Caujee river, where it is intersected by canals, and has all the advantages of the tides. It extends about a mile and a half along the Berbice, and each house has an allotment of a quarter of an acre, completely insulated by trenches. The government house is of brick, in the European style, and has been deemed the finest building in the colony. The other inhabitants of the district of Berbice are scattered in small villages a short distance up the river.

The capital of British Guyana is George Town, situated amidst dense foliage on the east bank of the river Demerara, about one mile and a half from a small fortification, built of mud and fascines, with two low platforms, and termed Fort William Frederick.

It has been remarked by Mr. Montgomery Martin, that if it were not for the tropical scenery around George Town, it might be mistaken for a Dutch city. Except close to the river, the houses, raised on supports, to prevent dampness, are widely scattered, built of wood after the Dutch style, with a *stoup*, coloured according to the taste of the owners, surrounded by a garden and lofty trees, and separated from each other by canals, dykes, or mud embankments. The most ancient part of the capital, Stabroek, runs back from the river towards the forest, consisting of two rows of houses, full a mile long, with a broad and shaded road between them, and a canal in the rear of each line of houses, communicating with the river. In consequence of the scarcity of fresh water, each house is provided with a large cistern, and pipes leading into it, for the preservation of rain water.

The barracks, hospitals, and public buildings evince the taste and munificence of the colonists, at whose cost they have been erected. George Town is divided into the following districts: Kingston, joining Fort William Frederick; Cumingsburgh, north and south; Vlissengen, which is subdivided into Rob's Town and Lacey's town; Stabroek, part of the old Dutch capital; also Eu, Rust, and Charles Town, which are bounded by the plantation of La Penitence.

Eastward of Fort William Frederick is situated Camp House, the residence of the governor, a few hundred yards to the east of which is the residence of the ordnance storekeeper. Between Camp House and the Ordnance department, a little to the south, are two fine hospitals, with the necessary buildings for domestics and attendants, and opposite to these are barracks, said to be equal in accommodation to any in the British Dominions. Eastward of the Ordnance department are the quarters of the engineers, and the York and Albany barracks, built by the colony. Facing the river, in the district of Stabroek, new public buildings of brick, stuccoed, have been erected by the colony to accommodate all the public officers. Near these buildings is the Scotch church, a very handsome modern structure, to the east of which are the town guard-house, &c.

The commerce of Guyana, so far as regards exports, is confined principally to sugar, rum, molasses, coffee, and cotton. Of these commodities, the quantity exported in 1836 was nearly as follows:—a hundred million pounds of sugar, three million gallons of rum, four million gallons of molasses, six million pounds of coffee, and half a million pounds of cotton,—the value of the whole being about two millions sterling.

Such is a brief sketch of the colony, with respect to government and commerce; and before we proceed to the topographical features of the country, we may refer to a few remarks by Mr. Martin on the state of British Guyana with respect to colonization.

The social condition of the mass of the population is now in too great a state of transition from slavery to freedom to admit of much speculation as to the future, and I conclude with observing that British Guyana offers a wide and fruitful area for the industry of the emigrant, the enterprise of the merchant, and the science of the geologist and natural philosopher. Millions of acres of fertile land, now lying waste, are adapted to the cultivation of every tropical product of which the mother-country stands in need. Tobacco, cotton, opium, silk, pepper, rice, indigo, timber, drugs, dyes, and spices, may be raised and exported to an incalculable extent, with benefit to all who engage in these pursuits. Surrounded as British Guyana is by the continental possessions of France, Spain, Holland, Portugal, &c., it behoves the British nation to view with interest, and even anxiety, the progress of our colonial power on one of the most eligible spots of the American hemisphere.

The next article of this series will introduce us to the topographical beauties of the country

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SUPPOSING the body of the earth were a great mass or ball of the finest sand, and that a single grain or particle of this sand should be annihilated every thousand years. Supposing then that you had it in your choice to be happy all the while this prodigious mass of sand was consuming, by this slow method, until there was not a grain of it left, on condition you were to be miserable for ever after; or supposing that you might be happy for ever after, on condition you would be miserable until the whole mass of sand were thus annihilated, at the rate of one sand in a thousand years; which of these two cases would you make your choice?—SWIFT.

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DRUIDICAL REMAINS IN ENGLAND.

THE rough and unhewn stone monuments found in many localities in England are generally attributed to the Druids, and with justice, for, as regards antiquity, all remains of a time prior to the nativity of our Saviour, are entitled to be so distinguished. It is almost impossible to assign any precise period for the erection of these curious structures, for, in fact, they were not all erected at one time; but still it must be evident to all that they were built by a people ignorant of architecture and sculpture, and, in all probability, of cemented walls; though this latter invention appears to have been known in very remote ages: however, we may safely say that they were erected as early as four or five hundred years before the Christian Æra.

Structures of this kind are in India known by the appellation of Pandoo Koolies, and a fabulous being named Pandoo, and his children, are believed to have been their authors; we find like erections also in many other parts of the globe, and to doubt for a moment of their having had the same origin would be absurd, as they all bear the same striking characteristics, whether they be in India, on the shores of the Mediterranean, in France, Denmark, in Sweden or Norway, or on the coast, or in the interior of our island.

The priesthood of the people, by whom these extraordinary structures were raised, are known by the name *Druids*, a term properly signifying *sacrificers under oaks*, for which trees they had much veneration, and from the remains of their temples, and their tenets and superstitions with which we are acquainted, we may infer with some degree of probability, that they were the descendants of a tribe of Brahmins, who at some distant period emigrated from the peninsula of India to the northern and western shores of Europe.

The structures of the aboriginal inhabitants of England seem to form themselves into the six following classes.

1. Single stones or pillars.
2. Temples and circles of stones.
3. Tolmens.
4. Cromlechs, or stones of sacrifice.
5. Logan, or rocking stones.
6. Cairns, or heaps of small stones.

The single stones which stand at the head of the above list, are evidently of patriarchal origin, and the earliest account of such erections is to be found in Genesis xxviii., where Jacob we are told set up a pillar, anointed it, and called it *Bethel*; that is, *God's house;* but it is probable that pillars of this description were in use in Palestine many years previously, to commemorate remarkable events by a people ignorant of the use of letters; and, consequently we find them in the Scriptures also called *stones of memorial*. Among the early Greeks, pillars erected upon the centre of the tumulus or mound of earth raised over the body of the deceased, were their only sepulchral monuments: in the same manner, we read Jacob erected one to the memory of his beloved wife Rachel: the name given to these pillars by the Greeks was βαιτυλοι, which by some is considered a corruption of the word *Bethel*. In after years the upright pillars, or obelisks, were worshipped as typical of the *solar beam*, and some suppose the *round towers* of Ireland to have been built with the same view, though undoubtedly at a subsequent period. The most remarkable pillar of this description is one in the churchyard of the village of Rudstone on the Wolds, in the East Riding of Yorkshire, at no great distance from the coast: its height is about twenty-four feet above the ground; and, according to the account of Mr. Pegge, in the fifth volume of the *Archæologia*, its depth under ground is equal to its height above; its width is about six feet, and its thickness two feet six inches, the material is a coarse kind of rag-stone, and its weight is computed at eighty tons. It appears more than probable that the village of Rhudstone derived its name from this pillar, *Rud*, or *Rhúdd*, meaning both in the British and Saxon dialects *red*.

The first mention we find of a circle of stones is at the time when the children of Israel crossed the Jordan dryshod, and Joshua commanded one man of each tribe to take a stone from the bed of the river, and to set it up at the place where the ark was about to rest for the night; that they were arranged in a circular form is evident from the name Gilgal or Galgal which was given to the spot, *gal* being the Hebrew for a circle or wheel, the reduplication, according to the eastern custom, serving to give it eminence, that is to say, *The* circle.

However, these circles have reference to, and were used as, temples in the solar worship. The circle of nineteen stones at Boscawen, in Cornwall, might have referred to the lunar cycle, which consisted of nineteen years; circles of nineteen stones also occur in many other localities, and others of twelve and thirty, the former referring to the months, the latter to the days of the solar month; many circles of other numbers also occur; as to the number of stones composing which, but little light can be thrown at this present time, so far remote from the age of their construction. There is a circle of this description at Rollrich in Oxfordshire, and another near Keswick in Cumberland, of which the stones are only from two to six feet in height; those of Stanton Drew are from eight to twelve feet; but the most magnificent temples of this kind in England are those of Abury and Stonehenge. The temple of Abury is in the form of a serpent and orb, a figure we see so often repeated in the sculptures of the ancient Egyptians; and antiquaries are of opinion that it was dedicated to the worship of the serpent, as symbolical of the evil demon, a worship very prevalent in Egypt and the East: the number of stones composing this temple, was, according to Stukely, 652, among which there were two circles of twelve, and two of thirty stones, the length of the serpent is about two miles. There are also the remains of a temple of the serpentine form at Carnac, in Brittany, still surpassing Abury in magnificence, of which it is computed that as many as four thousand stones still remain. The immense block of which Abury was constructed, appears to have been brought from the neighbouring hills, and the whole edifice was formerly surrounded by a trench and mound.

Stonehenge, though less in magnitude than Abury, has from its position received a much greater share of notoriety*; it is situated on Salisbury plain, about eight miles from Salisbury, and, from the greater art displayed in its construction, appears to have been erected at a later period than that of the former temple. So many descriptions of this temple have appeared in print, that we will here confine ourselves to a comparative notice of the relative sizes of Abury and Stonehenge.

Number of stones at Abury . . .	652	
Stonehenge . .	140	
Extent of Abury . . .	8750	cubits.
Stonehenge .	240	

The largest of the stones of Abury is double that of the largest of Stonehenge in superficial measure; the stones of the outer circle of Stonehenge are as lofty as those of Abury, but much narrower.

We now come to the *Tolmen*, which signifies *the hole of stone*. This was either an immense stone poised upon the points of a rock, so as to admit of the passage of the body of a child, or, in some cases, of a man, or a huge portion of rock, with a passage bored through; anciently great effects were produced, or believed to be, by being passed through these apertures; and, in some parts of Cornwall at no very distant period, children afflicted with weakness in their limbs were passed through the apertures of the Tolmen

* See *Saturday Magazine*, vol. I., p. 185.

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to be cured. There are two of these stone deities in the Scilly Islands, but the most remarkable is one situated in the tenement of Méu, in the parish of Constantine, Cornwall; it is a vast pebble of oval form, placed upon the points of two natural rocks; it is placed due north and south, and its longest diameter is thirty-three feet.

Cromlech is a name derived from the Hebrew, and signifies *a devoted stone;* they were used as altars for the sacrifice of human and other victims, and the northern countries they are denominated *blod*, that is, blood stones. The cromlech is generally a large oval stem supported upon others, and is to be met with in many places in Cornwall, Wales, and other spots in England and Ireland. One is in existence near the Kennel avenue of Abury, and another at Rollrich; but the one best known is that called Kit's Cotty-house on the downs between Maidstone and Rochester. Some antiquaries, however, suppose these stones to have been a distinct class from the altars, and to have been used for giving oracular responses, like those of Delphos and Dodona; and there is a tradition respecting the upper stone of a Cornwall cromlech, which was removed to serve as a bridge over a neighbouring brook, which gave to it the power of speech, but, at one time, when making an oracular effort it cracked, and has ever since been silent.

Logan, or rocking-stones, are, if possible, still more curious than any of the preceding classes; some of them are enormous masses of stone, placed upon the peaks of rocks, others are placed upon the level ground, and others again on rocky eminences, both on the coast, and in the interior; many of them vary from eighty to one hundred tons; but are yet so accurately poised as to vibrate upon the slightest pressure of the hand, or even a strong puff of wind. They were in all probability used as ordeals for the detection of criminals, the priests having sufficient dexterity to persuade the ignorant multitude that these stones were inspired by the deity. Mason alludes to this in his *Caractacus:*—

> Behold yon huge
> And unhewn mass of living adamant,
> Which poised by magic rests its central weight
> On yonder pointed rock.—Fixed as it seems,
> Such are its strange and virtuous properties,
> It moves obsequious to the slightest touch
> Of him, whose breast is pure; but, to the traitor!
> Although a giant's prowess nerved his arm,
> It stands as firm as Snowdon.

The most celebrated Logan is one situated near the Land's End, Cornwall, which some years back was displaced by a Lieutenant Goldsmith, the commander of a revenue cutter, and some of his men; but in consequence of the general indignation excited in Cornwall in consequence of this mischievous frolic, it was replaced with much difficulty and labour by the same Lieutenant, and now rocks as before. It is an enormous block of granite, weighing between eighty and ninety tons.

Cairns. In many parts of the British Isles, and more particularly in Wales, Scotland, and Ireland, and also in other northern countries, are conical heaps of small, irregular stones, generally surmounted by a flat stone of larger dimensions; the name is derived by Rowland from the Hebrew *Kerew-Ned*, a *cooped heap:* they are sometimes sepulchral monuments, but more generally we believe as altars, upon which in olden times the fires were kindled in honour of Beal or Apollo on May Eve, and the other Druidical festivals, and in the Highlands of Scotland, and in some parts of Ireland May-day is still called *Bealtine*, or *La Bealtine*.

We have now briefly reviewed these extraordinary remains of the ancient Britons; but as the subject is one of great interest, we may possibly refer to it again.

CHARLES BARCLAY WOODHAM.

ON CHESS.

X. CHESS WRITERS AND PLAYERS, (*continued.*)

THE CHESS KNIGHT, AS DESIGNED BY FLAXMAN.

> Then four bold Knights for courage famed and speed,
> Each Knight exalted on a prancing steed:
> Their arching course no vulgar limit knows,
> Transverse they leap, and aim insidious blows;
> Nor friends nor foes their rapid force restrain,
> By one quick bound two changing squares they gain;
> From varying hues renew the fierce attack,
> And rush from black to white, from white to black.
>
> SIR W. JONES.

THE year during which Carrera's *Treatise on Chess* appeared, was productive also of the work of Gustavus Selenus. This is a fictitious name adopted by the author, Augustus, duke of Brunswick Lunenberg. This work which is a large quarto of 550 pages, was printed at Leipsig, in 1616. He appears to have been an indefatigable player: he has analysed with great perseverance and attention some of his favourite games; and he occasionally displays considerable skill in his deviations from the models laid down by other players. He strongly reproves several of Damiano's moves; but Sarratt is of opinion that the duke has committed the same mistake as Ruy Lopez in venturing to criticise a better player than himself.

A considerable portion of his work is occupied by a long and uninteresting description of the game called the Battle of Numbers, or Rhythmomachai.

It also contains some futile attempts to improve the game of chess; and, among these, there is one which is as remarkable as it is ridiculous. It is extracted from a work (deservedly consigned to oblivion), written in German verse by James Mennels, and published at Costentz in 1507. Mennels has favoured the world with many situations in which check-mate is effected by a pawn: some of these present a ludicrous appearance; one party having *six*, and sometimes *seven queens;* but it must be observed, that this same Mennels has deemed it meet to deprive the queen of her horizontal and perpendicular powers: he allows her to move only in a diagonal direction; so that supposing the king to be on his own square, if the adversary's queen, properly supported should take the king's bishop's pawn, giving check, the king by removing to his bishop's square, or to his own second square, will be secure from all danger! SARRATT.

Gustavus Selenus also mentions the method of playing the courier game as practised at Ströbeck, a village situated between Halberstadt and Brunswick, at a distance of about six miles from the former place; and celebrated for some centuries on account of its inhabitants being good chess-players.

The introduction of chess into this village, is due to the following circumstance:—Towards the end of the fifteenth century, a dignitary of the cathedral at Halberstadt was exiled to Ströbeck; and being deserted by his former friends, he became the more attached to the inhabitants of the village, who had received him so

kindly that he was at a loss how to testify his gratitude. After much consideration he determined on teaching them the game of chess. He did so, and was delighted to find that they became partial to it, and made great progress in it. He soon felt amply rewarded for the trouble he had taken, for not only did they become proficients in the game, but it afforded him many opportunities of improving their morals and behaviour, which improvement became apparent in their intercourse with their neighbours. After some time, the exile was honourably recalled to his cathedral, and eventually became Bishop of Halberstadt. His prosperity did not make him forget his village friends—*his* Ströbeck, as he used to say—but on the contrary, he often went there and conferred many benefits on the community, amongst which he founded a free-school. A special injunction was laid on the masters of this school, to instruct all their pupils in chess, and to distribute prizes (consisting of chess boards and sets of pieces) at the end of every year, to the best players. In thus encouraging the game of chess, the worthy bishop had a higher object than mere amusement: he saw that by encouraging a game which draws so largely on the mental powers, *his* villagers would not be attracted by games of chance, nor injured by the vices and dissipations which accompany them. His object was happily gained; and we cannot but express a hope that ere long, the study of chess will be considered a necessary part of education, and, as such, introduced universally into schools of every description. It would be indeed delightful to see the same effect produced in our villages by the introduction of this game, as was witnessed at Ströbeck. The villagers devoted most of their leisure time to chess: the knowledge of the game became hereditary: mothers taught it to their daughters; fathers to their sons; the old men bequeathed the paternal chess-board to their children; there was an innocent emulation among families, each trying to surpass the other. The fame of Ströbeck extended throughout Germany, and many a chess player visited it to try his skill. It is said that the villagers generally proved victorious. After a time the evil custom of playing for money was introduced—the villagers grew vain of their skill, and wanted such a lesson as was given to them by the celebrated Silberschmidt, who visited them as a stranger, and agreed to play a match for a considerable sum of money. He vanquished their champion elect, and the villagers paid the money, but would not grant a certificate required by the conqueror attesting their defeat. "Take the gold," said they, "but leave us our glory." "Good people," replied Silberschmidt, "the money I have won from you I give to your poor and to your school; but on one condition, namely—you must swear that you will never more play for money. The noble science of chess carries its interest in itself; a single game won, is a treasure of satisfaction to the winner." The villagers took the oath, gave the certificate, distributed the money as was proposed, and never again staked any thing but their skill on the chess board.

Mr. Lewis visited this interesting village in 1831. He describes it as lying in a hollow about a mile from the high road, and containing about one hundred and twenty houses. Mr. Lewis walked to the village and introduced himself to the resident clergyman, whom he found an obliging and well educated man: the inhabitants were then in the fields gathering in the harvest, but a subsequent day was named for a trial of skill.

He informed me, (says Mr. Lewis,) that the game is still much played there, and that they have several strong players; though himself no player of the game, yet he is so persuaded of the advantage of cultivating it, that he encourages the children who attend the school, to practise it at proper times, and has succeeded in obtaining the grant of a small sum annually from the community, for the purchase of six chess boards and men to be given to the best six players among the scholars, the number of whom amounts to forty-eight; the method of ascertaining who are the best is, in the first instance, to have two sets of tickets, each numbered from one to twenty-four; these are drawn by the boys; then the two ones, two twos, &c., &c., play together; those who lose go out, and the remaining twenty four draw numbers in a similar way, and so on, until only six winners remain, to whom the boards are given.

In part of the village public house, Mr. Lewis observed the sign of a chess-board in the wall; it was rudely made up of stone: in the public room were hung up three boards,—one the common chess-board, and the others larger for the use of those who play the courier game.

At his next visit, Mr. Lewis called on the syndic of the village, who accompanied him to the public house and showed him the old chess-board and men, which were kept carefully locked up.

The board is of large size, being above two feet square, including the border, which is about four inches broad; on the border is a representation of the village of Stropcke, (it is spelt thus,) but not in *bas relief*, according to Mr. Silberschmidt's account, but rather in rude Mosaic; there appear to have been at that time three towers or steeples in the village, two only of which now remain, the third having been taken down, and the building converted into a saw mill. According to an inscription on the board, it appears to have been presented to the village by the Elector of Brandenburg, on the 13th of May 1651; on the other side, the board is divided into ninety-six squares, (twelve by eight,) this is intended for the courier game, which is played with the usual chess-men, to which are added for each player, four pawns, two couriers, a man and a fool, which last two are now called state counsellors.

The said elector also made them a present of two sets of chess-men, one of ivory, and the other of silver, half of which were gilt; the latter set is lost, having been lent to the dean and chapter at Halberstadt, who forgot to return them; this occurred so long since, that no one now living recollects having seen them: the ivory set is much too small for the board; the pieces are in tolerable preservation, and have nearly the same shape as those commonly played with; the upper part of the bishop, instead of being shaped like a mitre, has the form of a scoop. They have only two works on chess, one of them an imperfect copy of Gustavus Selenus, the other Koch's *Codex der Schachspielkunst*, in two volumes; the former they have had a long time; the latter was presented to them some years since by their present worthy pastor.

Mr. Lewis played three games of chess with one of the villagers of Ströbeck, and won them all. He considered his antagonist a weak player, and, from what fell in course of conversation, doubted whether there are any players in Ströbeck to whom a first rate player could not give a knight.

One of the most distinguished players that we have next to notice in the order of time is Gioachino Greco, commonly called the Calabrian, from Calabria, the place of his birth. He was of very low extraction; but having accidently learned the game of chess, he improved so rapidly, that Don Mariano Marano, a celebrated player, being informed of his aptitude for chess, received him into his house, and treated him as one of his family; and under his tuition, Greco soon improved so much as nearly to equal his master. Bayle speaks of him in these terms:—

Greco played at chess so skilfully that it cannot be thought strange that I consecrate to him a little article. All those who excel in their profession to a certain degree, deserve that distinction. This player did not find his match anywhere. He went to all the courts in Europe, and signalized himself there at chess in a most surprising manner. He found famous players at the court of France, such as the Duke of Nemours, M. Arnaud, Chaumont, and La Salle; but though they pretended to know more than others, none of them were able to play with him, nor could they cope with him altogether. He was at chess a bravo, who sought in all countries some famous knight with whom he might fight and break a lance, and he found none whom he did not overcome.

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Mr. Lewis (whose edition of Greco is the best) thinks this is certainly an exaggerated account of Greco's skill; but his work exhibits so much skill and ingenuity, and abounds with so many brilliant and instructive situations, that we know of no more fascinating work for the student in chess:—

It does not often happen (says Mr. Lewis), that Greco's method of attacking can be much improved, for in that part of the game he is eminently skilful; but the like praise cannot be given to his system of defence; it must, indeed, be evident that, as most of his games are won by brilliant moves, the defence is necessarily imperfect.

There have been many editions of Greco's work. The first English edition was published in London, by Heringman, in 1656, and is very imperfect. In 1750 appeared an edition, "so contrived that any person may learn to play in a few days without any further assistance." On this assurance, Mr. Lewis very properly remarks:—

Let not any one be led, by this promising title, to suppose that so difficult a game as chess is to be learned in a few days; considerable practice is necessary to form even a moderate player, but to become a first-rate player, genius and much study are indispensable requisites.

Greco died in the East Indies at an advanced age and bequeathed all his property to the Jesuits.

In 1672 was published "The famous game of chesse-play, being a princely exercise, whereby the learner may profit more, by reading of this small book than by playing of a thousand mates." The author of this book, one Arthur Saul, introduces some doggrel verses laudatory of his game:—

All you that at the famous game
Of chesse desire to play,
Come and peruse this little booke,
Wherein is taught the way.

The hidden slights to understand
That no man yet hath shonne,
Which other authors speak not of
And still remained unknown.

Even all things that concern this game,
And may thee excellent make,
Therein was cause that me did move
This paines to undertake.

&c. &c. &c.

Among his rules and laws of the game is the following advice:—

Doe not at no time that thou playest at this game (out of a conceit as I said, that anything becomes thee well) stand singing, whistling, knocking or tinkering, whereby to disturbe the minde of thy adversary, and hinder his projects: neither keepe thou a calling on him to playe, or hastening of him thereunto, or a shewing of much dislike that hee playeth not fast enough; remembering with thyselfe, that besides that this is a silent game, when thy turne is to play, thou wilt take thy owne leasure; and that it is the royall law so to deal with another, as thyself wouldst be dealt withall.

PREJUDICE is an equivocal term; and may as well mean right opinions taken upon trust, and deeply rooted in the mind, as false and absurd opinions so derived, and grown into it.—HURD.

WE find this great precept often repeated in Plato, *Do thine own work, and know thyself;* of which two parts, both the one and the other generally comprehend our whole duty, and consequently do each of them complicate and involve the other; for he who will do his own work aright, will find that his first lesson is to know himself, and he who rightly understands himself, will never mistake another man's work for his own.—MONTAIGNE.

THE maxim, "*in vino veritas*—a man who is well warmed with wine will speak truth," may be an argument for drinking, if you suppose men in general to be liars; but, sir, I would not keep company with a fellow, who lies as long as he is sober, and whom you must make drunk before you can get a word of truth out of him.—JOHNSON.

CHRISTIAN CONSOLATION ON THE DEATH OF FRIENDS.

It has been said, and I believe,
Though tears of natural sorrow start,
'Tis mixt with pleasure when we grieve
For those the dearest to the heart,
From whom long-loved at length we part;
As by a Christian's feelings led
We lay them in their peaceful bed.

Yet speak I not of those who go
The allotted pilgrimage on earth,
With earthborn passions grovelling low,
Enslaved to honour, avarice, mirth,
Unconscious of a nobler birth:
But such as tread with loftier scope
The Christian's path with Christian hope.

We grieve to think that they again,
Shall ne'er in this world's pleasure share:
But sweet the thought that this world's pain
No more is their's; that this world's care
It is no more their lot to bear.
And surely in this scene below
The joy is balanced by the woe.

We grieve to see the lifeless form,
The livid cheek, the sunken eye:
But sweet to think corruption's worm
The living spirit can defy,
And claim its kindred with the sky.
Lo! where the earthen vessel lies!
Aloft the unbodied tenant flies.

We grieve to think, our eyes no more
That form, those features loved, shall trace
But sweet it is from memory's store
To call each fondly-cherished grace,
And fold them in the heart's embrace.
No bliss 'mid worldly crowds is bred,
Like musing on the sainted dead!

We grieve to see expired the race
They ran, intent on works of love:
But sweet to think, no mixture base,
Which with their better nature strove,
Shall mar their virtuous deeds above.
Sin o'er their soul has lost his hold,
And left them with their earthly mould!

We grieve to know that we must roam
Apart from them each wonted spot:
But sweet to think, that they a home
Have gained; a fair and goodly lot,
Enduring, and that changeth not.
And who that home of freedom there
Will with this prison-house compare?

'Tis grief to feel, that we behind,
Severed from those we love remain:
'Tis joy to hope, that we shall find,
Exempt from sorrow, fear, and pain,
With them our dwelling-place again.
'Tis but like them to sink to rest,
With them to waken and be blest.

O Thou, who form'st thy creature's mind
With thoughts that chasten and that cheer,
Grant me to fill my space assigned
For sojourning a stranger here
With holy hope and filial fear:
Fear to be banished far from Thee,
And hope thy face unveiled to see!

There before Thee, the Great, the Good,
By angel myriads compassed round,
Made perfect "by the Saviour's blood,
"With virtue clothed, with honour crowned,
"The spirits of the just" are found:
There tears no more of sorrow start,
Pain flies the unmolested heart,
And life in bliss unites whom death no more shall part.

[BISHOP MANT'S *British Months.*]

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FRESH-WATER FISH. III.

The Trout. (*Salmo fario*, Linn.)

Should you lure
From his dark haunt, beneath the tangled roots
Of pendant trees, the monarch of the brook,
Behoves you then to ply your finest art.
Long time he, following cautious, scans the fly;
And oft attempts to seize it, but as oft
The dimpled water speaks his jealous fear.
At last, while haply o'er the shaded sun
Passes a cloud, he desperate takes the death,
With sullen plunge. At once he darts along,
Deep-struck, and runs out all the lengthened line;
Then seeks the farthest ooze, the sheltering weed,
The cavern'd bank, his old secure abode;
And flies aloft, and flounces round the pool,
Indignant of the guile. With yielding hand,
That feels him still, yet to his furious course
Gives way, you now retiring, following now
Across the stream, exhaust his idle rage;
Till floating broad upon his breathless side,
And to his fate abandon'd, to the shore
You gaily drag your unresisting prize.—Thomson

This beautiful fish is much prized and sought after, not only on account of the skill and patience required for its capture; for the trout, says Izaac Walton, "is more sharp-sighted than any hawk, and more watchful and timirous than your high-mettled merlin is bold;" but also for the estimation in which it is held as an article of food: "he may justly contend with all fresh-water fish, as the mullet may with all sea-fish, for precedency and daintiness of taste; and that, being in right season, the most dainty palates have allowed precedency to him."

The trout is known among ichthyologists as the yellow gray salmon with red spots, having the under jaw somewhat longer than the upper. It varies in appearance, according to the locality in which it is found; so much so as to induce the belief that several species exist. Mr. Yarrell thinks it probable that more than one species of the common trout may exist in this country; but considering the various geological strata traversed by rivers in their course, the effect these variations of soil must produce upon the water, and the influence of the water on the fish,—remembering also the great variety of food afforded by different rivers, and the effect which these causes in various degrees are likely to produce,—we need not be surprised at the variations both in size and colour which are found to occur. In the midland counties, where the trout thrives according to its habit of feeding, and the nature of its food, its figure is subject to slight variations; but the greatest variety is to be found in the tinge both of its ground colour, and spots. Its general length is from twelve to about sixteen inches; its weight quite uncertain. Occasionally it has been taken of ten and twelve pounds weight, and sometimes more; but as Mr. Blaine remarks, "a four or five pounds' trout is considered a very good sized fish, and one more often sought for than taken." Its colour is yellowish gray, darker or browner on the back, and marked on the sides by several rather distant, round bright red spots, each surrounded by a tinge of pale blue gray. Sometimes the ground colour of the body is a purplish gray, the red spots much larger, more or less mingled with black, and the the belly of a white or silvery cast. The fins are of a pale purplish brown, the dorsal fin marked with several darker spots: the head is rather large, the scales small, and the lateral line straight. The female fish is of a brighter and more beautiful appearance than the male.

The trout seems to appreciate the slightest changes in the weather, and shifts its ground with variations in temperature. Nothing can surpass the quickness of its expressive eye; which is assisted by what may be termed a sensibility of feeling, which enables it to detect the slightest agitation of the water. A shadow moving over the stream, the footstep of the passenger along the bank, and many similar trifles do not escape the notice of the trout. This is one reason why trout-fishing is so favourite a sport; skill, not strength, is required; so that those who love a quiet employment among the retired and beautiful scenes of nature, will continue to throw their line amid the sunny nooks which Walton describes so well:—

Turn out of the way a little, good scholar! toward yonder high honeysuckle hedge; there we'll sit down and sing, whilst this shower falls so gently upon the teeming earth, and gives yet a sweeter smell to the lovely flowers that adorn those verdant meadows.

Look! under that broad beech tree I sat down, when I was last this way a fishing; and the birds in the adjoining grove seemed to have a friendly contention with an echo, whose dead voice seemed to live in a hollow tree near to the brow of that primrose hill. There I sat viewing the silver streams glide silently towards their centre, the tempestuous sea; but sometimes opposed by rugged roots and pebble-stones, which broke their waves, and turned them into foam. And sometimes I beguiled time by viewing the harmless lambs; some leaping securely in the cool shade, whilst others sported themselves in the cheerful sun; and saw others craving comfort from the swollen udders of their bleating dams. As thus I sat, these and other sights had so fully possessed my soul with content, that I thought as the poet has happily expressed it,

I was for that time lifted above earth;
And possessed joys not promised in my birth.

We have said that the appearance of the trout varies according to the locality in which it is found; and these variations depend for the most part on difference of soil and of food. That trout should differ within a limited locality is not so easily explained. Mr. Yarrell suggests that a close examination of those parts of the fish which afford the most permanent characters should be made in order to determine whether the subject ought to be considered only as a variety, or be entitled to rank as a distinct species. In some of the lochs of Scotland, great variation has been observed in the trout according to the quality of the water. In some of them, where the water is clear, the fish are reddish or silvery: in others, where the loch receives the drainings from boggy moors, they are nearly black, and of small size. The most brilliant and beautiful trout are generally found in streams that flow rapidly over gravelly or rocky bottoms. They are finest in appearance and flavour from the end of May till towards the end of September: an effect produced by the greater quantity and variety of nutritious food obtained during that period. An experiment was made some years ago, to ascertain the relative value of different kinds of food, which is thus related by Mr. Stoddart:—

Fish were placed in three separate tanks, one of which was supplied daily with worms, another with live minnows, and a third with those small dark-coloured water-flies which are found moving about on the surface, under banks and sheltered places. The trout fed on worms grew slowly, and had a lean appearance; those nourished on minnows, which, it was observed, they darted at with much voracity, became much larger; while such as were fattened upon flies only, attained, in a short time, prodigious dimensions, weighing twice as much as both the others together, although the quantity of food swallowed by them was in nowise great.

The spawning time of the trout, according to Sir Humphry Davy, is from the middle of November till the beginning of January; their maturity of roe depending upon the temperature of the season, as well as on the nature and quantity of their food. Mr. Blaine has observed, that the largest individuals of the species spawn the first. At the close of September they quit the deep water to which they had retired during the latter part of Summer, and make great efforts to gain the source of the currents: "he will get" as Walton says, "almost miraculously, through weirs and floodgates against the streams; even through such high and swift places as is almost incredible;" and having got to the end and sides of a stream, or the gravelly bottoms of lakes not yet destitute of weeds, they make beds, and deposit their ova therein.

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At the spawning time the trout should not be taken: a remark which applies generally to all fish; their flesh is then insipid, and they afford but little or no sport. At other times, when the trout is in good condition, the head is small, and the body oval, the flesh of a deep red, and the general colour that of a deep olive above, and of a bright silver below: the spots are also brilliant and distinct. "A hog-back and a little head to either trout, salmon, or any other fish, is a sign that that fish is in season," is Walton's homely rule.

Sir Humphry Davy says that the red hue of trout, salmon, and char, is to be attributed to a peculiar coloured oil, and that the colour may be extracted by alcohol. This, perhaps, will account for the decrease in the red colour of trout, when they are emaciated by spawning, or when they inhabit waters that are not suited to them.

The weight and dimensions of this fish are, as we have said, subject to much variation. Some remarkable instances are recorded of very large individuals of the species being caught. One was taken on the 11th of January, 1822, in a little stream ten feet wide, branching from the Avon, at the back of Castle-street, Salisbury, whose weight was twenty-five pounds. Mrs. Powell, at the bottom of whose garden the fish was first discovered, placed it in a pond, where it was fed: it lived four months, and at the time of its death it had decreased in weight to twenty-one pounds and a quarter. A trout was taken in September, 1832, in the neighbourhood of Great Driffield, which measured thirty-one inches in length, twenty-one in girth, and weighed seventeen pounds.

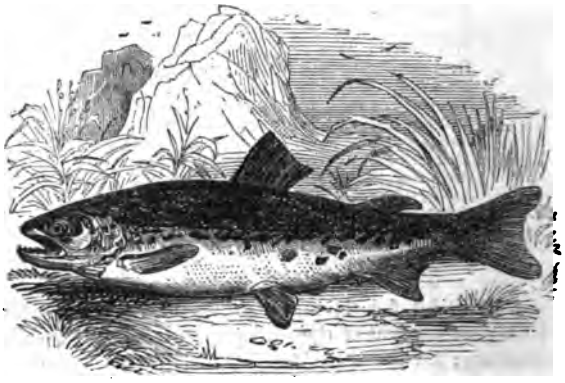
In its habits the trout is solitary and predacious. It avoids man; although there are instances in which it has lost much of its wildness by domestication. Mr. Daniel relates an anecdote in proof of the familiarity of the trout. He says:—

The garrison of Dumbarton Castle, in Scotland, was [in 1808] thrown into general lamentation by the sudden loss of its *oldest veteran*, who had served therein, a general favourite of the various regiments who annually change their quarters, while he remained on permanent duty, without any alteration in rank or condition, for the long period of twenty-eight years. He was, however, always deemed an odd fish, being neither more nor less than a trout, which having been caught by an officer in the river Leven, was brought alive and put into the garrison well, that flows to the surface, where in time it became so tame as to receive its food of bread, &c., from the hands of the soldiers, in the water. When first taken it weighed little more than a pound, and (from the quality of water, as is supposed,) it never afterwards increased in size. The loss of this extraordinary favourite, was, we are told, much regretted by those who compose the present garrison of Dumbarton Castle, and will probably be so by many others, who in former years have been equally diverted by the pleasing intercourse with their aquatic comrade.

The sensitive nature of the trout makes it very choice in the quality of its pasture, and causes it to be affected by any impurity to which its haunts may be subjected. It cannot endure salt-water, and any mineral impregnation is also unfavourable to it. A few lumps of lime thrown into a pool will soon destroy all the trout contained in it; they depart also from the brooks which flow through fields which are manured with lime. They die in the water in which flax is steeped, and the drainage of a mine is often sufficient to banish all the trout from a considerable stream.

In Ireland the gillaroo or gizzard trout is much esteemed. They are found in the Irish lakes, such as those of Galway, and are particularly remarkable for the great thickness of their stomachs, which bearing some slight resemblance to the organs of digestion in birds, are called gizzards. Their food is chiefly shell-fish and snails, but they rise readily at a fly. In Canada there are trout of an enormous size, some of them, according to Mackenzie, measuring five feet in length; yet of a delicate flavour. In Lake Superior, trout have been taken of fifty pounds' weight.

The trout should be cooked, if possible, on the day on which it is caught, and be kept as cool as possible until everything is ready for cooking. A large handful of salt must be put into a kettle of water, and when this boils the fish is to be put in. A trout of about a pound weight will be properly cooked in about ten minutes. It should be served up immediately, and eaten with mustard and vinegar only.



THE TROUT

PRESENT time and future may be considered as rivals; and he who solicits the one, must expect to be discountenanced by the other.—REYNOLDS.

EVERY man is rich or poor, according to the proportion between his desires and enjoyments. Of riches, as of everything else, the hope is more than the enjoyment; while we consider them as the means to be used at some future time for the attainment of felicity, ardour after them secures us from weariness of ourselves, but no sooner do we sit down to enjoy our acquisitions than we find them insufficient to fill up the vacuities of life. Nature makes us poor only when we want necessaries, but custom gives the name of poverty to the want of superfluities. It is the great privilege of poverty to be happy unenvied, to be healthy without physic, secure without a guard, and to obtain from the bounty of nature what the great and wealthy are compelled to procure by the help of art. Adversity has ever been considered as the state in which a man most easily becomes acquainted with himself, particularly being free from flatterers. Prosperity is too apt to prevent us from examining our conduct, but as adversity leads us to think properly of our state, it is most beneficial to us.—JOHNSON.

A MAN who has been brought up among books, and is able to talk of nothing else, is a very indifferent companion, and what we call a pedant. But we should enlarge the title, and give it to every one that does not know how to think out of his profession and particular way of life. What is a greater pedant than a mere man of the town! Bar him the play-houses, a catalogue of the reigning beauties, and you strike him dumb. The military pedant always talks in a camp, and in storming towns, making lodgements, and fighting battles from one end of the year to the other. Everything he speaks smells of gunpowder; if you take away his artillery from him, he has not a word to say for himself. The law pedant is perpetually putting cases, repeating the transactions of Westminster-hall, wrangling with you upon the most indifferent circumstances of life, and not to be convinced of the distance of a place, or of the most trivial point in conversation, but by dint of argument. The state pedant is wrapt up in news, and lost in politics. If you mention either of the sovereigns of Europe, he talks very notably; but if you go out of the gazette, you drop him. In short, a mere courtier, a mere scholar, a mere anything, is an insipid, pedantic character, and equally ridiculous.—*The Spectator*.

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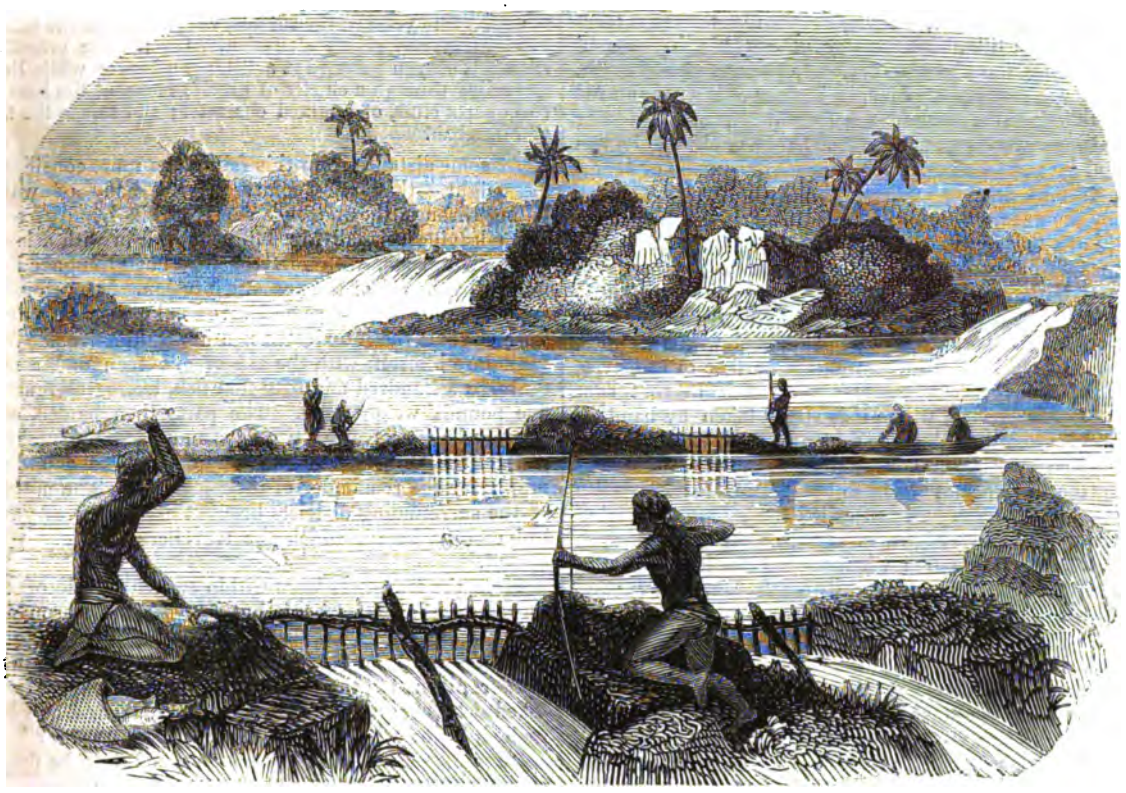

VIEW ON THE MASSAROONY, WITH NATIVES FISHING.

III. VOYAGE UP THE MASSAROONY RIVER.

HAVING, in our first article, given an outline of Guyana, in its whole extent, and in the second a sketch of the historical and political events which have brought British Guyana to its present state, together with a notice of the seat of government, &c., we proceed to visit the interior of the country.

It is a fact observable in all infant colonies, that the banks of the rivers, as well as the sea-shore, become the parts first settled; and the object of this arrangement is sufficiently obvious. One consequence of this is, that if we follow the course of the principal rivers, we shall meet in succession with most of the objects worthy of notice. We shall adopt this plan on the present occasion. British Guyana comprises the three provinces of Essequibo, Demerara, and Berbice, named from three rivers bearing those appellations; and nearly all the settlements, except those inhabited by the native Indians, are situated on the banks of these rivers. We will begin with the Essequibo.

The Essequibo empties itself into the Atlantic by a mouth fourteen miles wide; but this is separated into four channels, by three low islands, one of which is seven miles in length. These islands, as well as many others near the mouth of the river, are covered with sugar plantations. For more than thirty miles the river is eight miles in width, and is described as appearing almost like a lake studded with numerous wooded islands, bounded on either side by a dense and almost impenetrable forest, rich in all the exuberant verdure of a fruitful soil under a tropical sun. We soon arrive at the point where the united rivers of the Cuyuni and the Massaroony fall into the Essequibo. We will turn into the latter river, and after tracing its course, return to the Essequibo.

Mr. Hillhouse voyaged up the Massaroony some years ago, and was joined by another gentleman, and the two hired a canoe and a small hunting boat, which they manned with twenty-three Indians. They took with them, besides articles for their own use, various others with which to purchase the good will of the natives, such as beads, needles and pins, razors, looking-glasses, &c. The provisions consisted of rum, sugar, salt, hams, rice, butter, biscuit, salt fish, and other articles.

The lower part of the course of the river is divided into ten or twelve channels, by innumerable islands stretching parallel to the banks. Here too are a number of rapids, which are ascended by the natives in their canoes thus:—The rapids do not fall in one sheet over a level ledge, but force themselves through a number of fissures, large intermediate blocks of granite dividing the different shoots of the fall. At the base of these blocks is an eddy, into which the canoe is forced, where it becomes stationary, having no current either way. The crew now spring upon the rock, and wade as far up as they can find footing. By means of a long and stout rope they then pull the canoe into one of the shoots of the fall, where there is water enough to float

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her, and by main strength haul her up the ascent. They then take her out of the current, and lay her stern against the top of the rock, from whose bottom they have just mounted, with her head right up the stream, and at a given signal they spring into her, and, pulling with all their strength, endeavour to cross diagonally the different currents till they get into another eddy. This is the time of greatest danger in ascending, for if the men are not active in seizing the paddles, the head of the canoe is taken by the current, and she drifts broadside down the fall, where she must be inevitably upset.

Mr. Hillhouse's party ascended numerous rapids by such means as these,—voyaging during the day, from seven o'clock till about four, and forming a bivouac on land during the night, under tents formed of sail-cloth. Whenever a party of friendly Indians was encountered the travellers purchased cassava bread, or any other provisions which happened to be attainable. It was found that the natives had a very curious mode of catching fish, by driving them to the surface as an escape from the effects of a vegetable thrown into the water. A kind of vine, called the *hai-arry*, has a root about two inches in diameter, filled with a narcotic gummy milk. The natives beat the root with heavy sticks, till it is shreded like coarse hemp: they then immerse it in water, which speedily becomes whitened with the juice. This infusion is then thrown on the surface of the river, and in about twenty minutes every fish at that spot rises to the surface, where it is either taken by hand or shot with arrows. A cubic foot of the root will produce this effect over an acre of water; and what is remarkable, the fish are not found to be deteriorated in quality by this proceeding. A fish called the *pacou*, averaging seven pounds in weight, is captured by these means, aided by the following: when the natives find a part of the river abundantly supplied with this fish, they enclose it with a wall of loose stones, a foot above the surface of the water, leaving two or three spaces about ten feet broad, for the fish to enter. For these spaces they prepare wooden hurdles, and about two hours before day-break they proceed silently to stop the apertures with them. The fish are thus enclosed in a temporary pond, which is inspected at day-break, and an infusion of hai-arry is poured on the surface of the water.

Mr. Hillhouse and his companions found it quite a relief when, after having proceeded for many days up the river, they got rid of the innumerable islands, rapids, and falls, and came to a spot where the river presented an open and placid aspect. It appeared like an inland lake, and at a distance of sixty miles was discerned the summit of a mountain called Arthur's Table, five or six thousand feet in height. The migratory habits of the Accaway Indians, who inhabit this region, were strikingly exemplified during the voyage: a populous village one year is often totally deserted the next, and the inhabitants some hundred miles away. In 1830 Mr. Hillhouse had met with an Indian settlement, consisting of about two hundred persons, and when he visited the same spot in 1831, with the hope of obtaining a supply of provisions, he found the place wholly deserted.

When they had been twenty-six days on the river our travellers came to the fall of Macrebah, on the Corolung creek, which empties itself into the Massaroony.

The features are so totally dissimilar (says Mr. Hillhouse) to those which are generally described as beautiful and romantic, that I can only state, whatever was the cause, my chief sensation was an oppression of the senses, from which I was glad to escape. In the first place, the water of the creek, though perfectly transparent, is a deep chocolate colour, and the sands are reflected in it, of a bright claret or purple. The creek winds about in the most opposite directions, and at every turn a large and bold spit of white sand projects, which contrasts most unpleasantly with the surrounding water. There is uniformly no middle ground for the landscape; but from the dark and still creek, with its uniform fringe of trees, starts up, as if by magic, a perpendicular cliff, of one thousand or fifteen hundred feet height, which you know is distant, but which you feel as if in your most dangerous proximity; and as you see all around you detached masses, apparently torn from these gigantic walls of nature, you expect every moment to see one of them blocking up the creek before you, or cutting off your retreat. Every two or three hours you come to an immense block of granite, to pass which you have a channel barely wide enough for your craft: then the channel widens to one hundred and fifty yards, and you are in a claret-coloured lake, so shallow that you can scarcely swim. At the very last you enter a capacious basin, as black as ink, surrounded by a bold extensive sand, as white as chalk, and you hear a fall of water before you, but perceive no current, though there is a foam like yeast on the surface, which remains the whole day without any visible alteration. On a more attentive examination you perceive at a distance a broken white line, struggling through a cluster of granite rocks, at the base of two quartz cliffs, of a mixed character; and this is the fall of Macrebah.

At some distance from this fall is one more considerable height,—that of Coomarrow, the body of water falling through the immense depth of six hundred feet. After leaving this fall Mr. Hillhouse fell in with a large party of Indians, with forty or fifty boats, engaged in fishing by the aid of the narcotic infusion. Men, women, and children, with bows and arrows, knives, and nets, were chasing the intoxicated fish in all directions. Mr. Hillhouse himself, with the aid of one man and a net, captured a hundred and fifty-four fish, averaging four or five pounds' weight each. The party then landed, and employed themselves for two days and nights in smoking and curing the fish, by which they obtained an abundant supply for the remainder of their journey. The natives of the surrounding districts brought abundance of yams and cassava bread, which the travellers willingly purchased.

Here the travellers were within two days' ride of the sources of the Massaroony, but as the rainy season was about to commence, the party returned. The mode in which these regions are inhabited may be inferred from an answer given by the natives to Mr. Hillhouse, who asked whether the mountains were inhabited. They replied, "No: where would the people get water?" It appears then that the scanty population are to be found only near the creeks which fall into the large rivers.

The natives here alluded to are generally very inoffensive in their behaviour, though in a very low stage of civilization. Sir J. E. Alexander, while going up the river, saw a family of natives crossing it in their log canoe: he paddled after them, and landed under some locust-trees, where he found a native settlement. The logies were sheds, open all round, and covered with the leaves of the trooly palm, some of them twenty-four feet long; and suspended from the bamboo timbers of the roof were hammocks of net-work, in which the men were lasily swinging. One or two of those who were awake were making arrow-heads out of hard wood. The men and children were entirely naked, with the exception of a cloth round the loins, but the women had blue petticoats and braided hair. They were employed in scraping the root of the cassava tree into a trough of bark: the shreds are then put into a long press of matting, and the poisonous juice expressed, after which the dry farina is baked on an iron plate. The old women were weaving square aprons of beads, together with armlets and ankle ornaments. Some were fabricating earthen pots, and all the females seemed to be actively employed. They offered their visitor a red liquor called *casecree*, prepared from the sweet potatoe, also *piwarry*, an intoxicating beverage made by chewing the cassava, and allowing it to ferment. At some of their feasts the Indians prepare a small canoe full of this liquor, by the side of which the entertainers and their guests roll together in a state of brutal intoxication for two or three days, their helpmates looking after them, and preventing the sand

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from getting into their mouths. This is certainly a practice sufficiently debasing, but the liquor is not so baneful as ardent spirits, and the natives are well again after a night's rest. Fish, which the men had shot with their arrows, and birds, were brought out of the canoe, and smoke-dried on a grating of bamboos over a fire.

We shall here terminate our notice of the Massaroony, and in the next paper resume our route on the Essequibo, from the spot where the Massaroony enters it, and then proceed up that river towards its source.

AMICABLE CEREMONIES.

II.

Salutations.—Reverences.

In a former article, at page 158 of this volume, we entered into a description of various amicable ceremonies used in different parts of the world. We here resume the subject, in order to extend still further our descriptive notice of Salutations.

As we have before shown, salutations consist, for the most part, of certain gestures; and oftentimes an express assurance, or wish, is added to such mute signs of feeling. The difference in the forms of salutation often extends so far, that one nation considers that a mark of rudeness, which another esteems a mark of civility.

In most German countries, for instance, it is an act of politeness to kiss the hands of ladies: but in Italy, this is regarded as a mark of familiarity which is permitted only to the nearest relations. In Russia, however, the ladies allow not only the hand to be kissed, but even the forehead, and would consider themselves insulted by the omission of this ceremony.

Instead of the customary salutation in the protestant countries of Germany—"Good morning,"—"Your servant," &c., the Roman Catholic of these parts of the world was accustomed to salute in the manner prescribed by the Pope, Benedict XIII., in 1718,—"Praised be Jesus Christ;" to which the answer is,—"For ever, Amen."

The military salutations introduced among the Germans, at the beginning of the sixteenth century, consist in touching the hat or cap, lowering the standards and the sword, or raising the musket.

The usual salutation of the miner is—"Good luck to you."

Vessels out at sea, when they meet, salute each other by a discharge of cannon, by striking the flag, or by the cheers of the sailors, &c.

In one of the larger Cyclades (islands of the Archipelago), persons saluting reciprocally moisten each other's hair.

The salutation of the Hindoos in Bengal consists in touching the forehead with the right hand, and bending the head forwards. They first place the right hand on the breast with a profound inclination, then touch the ground, and finally, the forehead with the same hand; calling themselves all the while the most humble slaves of him whom they so salute.

The inhabitant of the island of Sumatra, when he salutes, bends the body profoundly, begs the left foot of him whom he addresses, kneels on the ground, and applies this foot to his own crown, forehead, breast, and knee; finally, he touches the ground with his head, and remains for some moments stretched out at full length.

At an entertainment in Persia, the host goes a considerable distance to meet his guests, bids them welcome with the most respectful compliments, then returns hastily to the door of his own house, and waits their arrival to repeat the same demonstrations of respect.

Mr. Russell, in his pleasant sketches of the domestic manners of the Turks says,—

A bashaw rises from his seat on the entrance of some of the principal personages, but receives all other visitors sitting. Other persons of distinction usually rise to welcome, or bid farewell, to their guests. As soon as the visitor has taken his place, a string of pages make their appearance, preceded by an officer, called Kahwagee, distinguished by a large silk apron, who carries a round salver, covered with red cloth, in the middle of which salver is placed a coffee pot, surrounded with half-a-dozen small cups reversed. The first page, carrying a large silk or embroidered napkin, drops down on his knees, and, resting on his hams, spreads the napkin over the stranger's robe, so as to prevent its being accidentally soiled. A second, in the same attitude, presents the sweetmeat in a crystal cup, together with a small spoon, with which the guest helps himself. A third, having received a cup from the Kahwagee, stands ready with the coffee; he does not kneel, but stooping gently forward, first lowering, then quickly advancing the hand, delivers the cup with a dexterity to be acquired only by practice. A fourth brings the lighted pipe, and first laying down an utensil, called niffida, for preserving the carpet, upon which the bowl of the pipe is placed, he presents the other end of the pipe, by an easy movement of one arm, while the other hand is placed on the breast. The moment the coffee is finished, a page is ready to receive the empty cup, which he catches, as it were, between both hands, the left palm turned up: another page, kneeling also, removes the napkin, and the coffee cup being replaced on the salver, the Kahwagee retires, while the pages, one hand laid on the girdle, and crossed by the other in the attitude of humble attendance, remain at a little distance.

In China, some salutations are peculiar to men, and others to women: but the latter are not allowed to salute the former. Children, in saluting, fall on their knees before their parents, and servants before their master or mistress.

In one of the Japan islands, the inferior, of two persons saluting, takes off his sandals, puts his right hand into his left sleeve, permits his hands, thus crossed, to sink slowly upon his knee, passes the other person with short measured steps, and a rocking motion of the body, exclaiming with a fearful countenance, "Augh! augh!" (Do not hurt me!)

The women of Siam, even when advanced in age, are saluted with the names of the most beautiful and most precious objects in nature, but not without the additional word "*young*"; as "young diamond," "young gold," "young heaven," "young flower," &c.

In Ceylon, when persons salute, they raise the palm of the hand to the forehead, and make a low bow.

The greeting of the common Arabian is "Salâm alikum" (Peace be with you),—a salutation which has been long in use among the Jews. At the same time, he places his left hand upon his breast, as a sign that this wish comes from his heart. The reply is, "Alikum essalâm" (With you be peace). But Arabians of distinction embrace each other two or three times, kiss each other's cheeks, and inquire two or three times after each other's health: at the same time, each kisses his own hand. The Arabs of the Desert shake hands six or eight times. In Yemen, a province of Arabia, persons of distinction, after a long refusal, allow their fingers to be kissed.

The negroes of Sierra Leone bend the right elbow, so that the hand touches the mouth: the person saluted does the same: they then put their thumb and forefinger together, and withdraw them slowly. Other negroes snap their fingers on meeting each other, pull the comb out of their hair, and replace it.

In Lower Guinea, the saluting person seizes the fingers of the other, brings them into a particular position, presses them, and cracks them hastily, calling—"Akkio, Akkio," (Thy servant, thy servant). Cracking the fingers appears to be a genuine negro mark of friendship, with the expressions—"Auzi, Auzi," (Good day, Good day): or "Bere, Bere," (Peace, Peace). If the Mandingoes, in Western Guinea, salute a female, they take her hand, raise it to their nose, and smell it twice.

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The king of Dahomey, a district of Guinea, when wishing to salute foreigners, sends a messenger with a band of negro soldiers. The officers of the corps approach the visitors with drawn swords, which they brandish over their heads with curious gesticulations and motions. They then place their swords upon their bodies, and. after a repetition of these ceremonies, the messenger presents them his hand, and drinks to their health.

When a native of Morocco wishes to salute a foreigner, he rides full speed towards him, as if about to run him down; he then suddenly stops, and discharges his pistol over the head of the stranger. Persons of equal rank salute each other nearly in the European way: they shake hands, and kiss each other's face and beard, particularly if they are friends.

The Egyptians, in saluting, extend their hands, place them upon their breast, and bend their heads. The greatest act of politeness is to kiss their own hand, and afterwards to place it upon their heads. They only kiss the hands of men of distinction; not of women. Inferior officers hold the stirrups of their superiors when mounting on horseback. In the divan, the inferior takes off the slipper of the superior, places it by his side, and receives the same salutation from the latter.

In some countries of Africa people take off their clothes, fall on their knees, bend their heads to the ground, and cover their head and shoulders with sand. In others, they seize the right hand of him for whom they wish to show respect, and raise it to their mouth.

The salutations between the different tribes in the north-west of America are very ceremonious. If two tribes meet, they stop at the distance of twenty or thirty steps, throw themselves on the ground, and remain for some moments in this position. The two eldest of each party then advance, and relate very circumstantially the dangers they have encountered. As soon as they have finished their relations, they all begin to sigh. These sighs are finally changed into a yell, in which the young girls, particularly, endeavour to outdo the others of the tribe. With these manifestations of sympathy both parties approach, but each sex separately. Tobacco-pipes are handed about, and their affliction is soon changed into merriment.

The savage of Louisiana territory, when saluting a person of distinction, begins a loud howl: in the hut he repeats the salutation, holding his hands above his head, and howling three times. He returns thanks with another howl, when the superior invites him, with a sign, to sit down.

The manner in which the inhabitants of South America salute each other, is short. Their address is—"Ama re ka," (Thou); and the answer—"A," (Yes).

The people of the Society and Friendly Islands, who, in saluting, touch the ends of each others' noses, return the salutation by each rubbing the hand of the other on his own nose and mouth.

The inhabitant of Otaheite, in choosing a friend, presents him sometimes with a part of his dress, and sometimes with the whole.

We shall conclude this subject by detailing a few salutations, which partake more largely of the character of *reverence*; remarking, by the way, that the tendency to slavish salutations and abject REVERENCES has always prevailed, and still eminently prevails, in the Eastern regions of the globe.

The Russian throws himself on the ground before his master, clasps his knees, and kisses them: this is a very ancient custom, and is still prevalent in the East, where they usually kiss the feet of their superiors.

The Pole bows to the ground, and the Bohemian kisses at least the gown of any one for whom he wishes to express his profound respect.

The Turk crosses his hands, places them upon his breast, and bows.

In China if two persons meet on horseback, the inferior in rank dismounts from his horse before the superior, and remains standing until he has passed.

In Siam, the inferior throws himself on the ground before his superior. The latter then sends one of his attendants, who are very numerous in the case of persons of distinction, to examine whether he has eaten, or carries with him, anything of an offensive smell:—if so, he receives a kick from the superior, and must retire immediately: otherwise, the servant lifts him up.

In Ceylon, an inferior throws himself on the ground before a superior, continually repeating his name and dignity; while the latter very gravely passes on, and hardly deigns to utter a word of reply.

The Abyssinians and some other people of Africa fall on their knees before their superiors, and kiss the ground.

Thus have we given our readers a tolerably full description of the various modes of saluting and of showing respect, which are in vogue in different parts of the world; and we cannot help remarking that, though such modes are for the most part singular, and often *apparently* ridiculous, they are perhaps more referrible to nature, than we may at the first view be led to suppose.

RELIGION.

As when upon some dismal night
The wanderer wends his way,
Some star appears to guide aright,
And lead him on till day—
So is the hope, O God! that's given
By thee to man of future heaven;
Like that, it shines when all is drear,
And 'mid our darkness shows most clear.

When on the foaming billows tossed,
The mariner destruction fears,
Yet shall his vessel not be lost—
A lighthouse on the rock appears.
And thus, when near the rock, O God—
The rock of sin, and guilt's abode—
Thy word, a lighthouse to the soul,
Shall warn us off the dangerons shoal.

Or, if through lonely deserts straying,
Oppressed with toil, fatigue, distress,
We see a distant fountain playing,
All once again is happiness.
So shall thy word, great Father, give
Thy children hope, and bid them live;
A fountain springs on Calvary,
And they who drink shall never die.

Yes, ever there, till time shall end,
Thy promise ever lives—
Thrice happy we, if God befriend,
And every fault forgives;
And here, though earthly woes combine,
Thy word shall always brightly shine;
And, God, be thou for ever thus,
A fountain, star, and light to us.

T. A.

As we see some grounds that have long lain idle and untilled, when grown rank and fertile by rest, to abound with and spend their virtue in the product of innumerable sorts of weeds and wild herbs, that are unprofitable, and of no wholesome use; even so it is with wits, which if not applied to some certain study that may fix and restrain them, run into a thousand extravagancies, and are eternally roving here and there in the inextricable labyrinth of restless imagination.—MONTAIGNE.

FRUGALITY may be termed the daughter of prudence, the sister of temperance, and the parent of liberty. He that is extravagant will quickly become poor, and poverty will enforce dependence, and invite corruption. It will almost always produce a passive compliance with the wickedness of others, and there are few who do not learn by degrees to practise those crimes which they cease to censure.—JOHNSON.

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RURAL SPORTS FOR THE MONTHS.

MAY.

This subtle plunderer of the beaver kind,
Far off, perhaps, where ancient alders shade
The deep still pool, within some hollow trunk
Contrives his wicker couch: where he surveys
His long purlieu, lord of the stream, and all
The finny shoals his own.—On the safe sand
See there his seal impressed! and on that bank
Behold the glittering spoils! half eaten fish,
Scales, fins, and bones, the leavings of his feast,
His seal I view! O'er yon dark rushy marsh
The sly goose-footed prowler bends his course,
And seeks the distant shallows.—SOMERVILLE.

THE OTTER, (*Mustela Lutra.*)

OTTER-hunting, though fallen into comparative disuse, is yet sufficiently practised to make it desirable that we should notice it among our other sports. It was formerly a favourite British pastime, and during the reign of Queen Elizabeth large packs of otter-hounds were kept in various parts of the kingdom for the diversion of the young nobles. These hunts were attended with certain formalities duly to be observed. The dresses of the hunters were of a gay description, consisting of a green vest, bordered or turned up with red; a cap of fur, encircled by a gold band, and occasionally surmounted with a small dyed ostrich feather; waterproof boots, ornamented with red or gold tassels. A disorderly sort of hunt was also carried on by the lower orders when a whole village crew or township united to pursue the otter. On these latter occasions weapons of all descriptions and dogs of various kinds were employed.

Otter-hunting is pursued at a season when fox-hunting and hare-hunting are given up, and consequently has its advocates among those who can ill bear the tedium of waiting for the return of the more popular sports.

The return of warm weather, which invites the sportsman to this diversion, likewise diminishes the risk attendant on it. The otter-hunter is considered unfit for his occupation if he fears the consequences of a "ducking;" and if he is lucky enough to spear the otter, he usually plunges into the stream without hesitation, and raises his prey out of the water, while his hounds press eagerly around him to give a few more shakes to the tough hide of the animal.

The weapons formerly used in the chase of the otter were a forked spear with small barbs, and a single spear with a slight barb, a mere ashen pole, pointed at one end, being in use among the peasantry. At the present time a more efficient weapon is used by the best otter-chasers; this is the modern spring barb, which is so constructed as to secure the otter, and prevent the possibility of escape when once he is struck with this weapon. The pursuit of this animal is commenced at an early hour in the morning, as the game may then be more readily tracked to his couch or kennel. This is generally formed in a bank by the side of a river, brook, or pond, and artfully concealed by having its opening behind a bush, beneath some overhanging ridge of earth, among twisted roots, or in some equally unsuspected place. Sometimes the otter leaves its couch as soon as it becomes sensible of the approach of the hounds, and, diving under water, makes its way up the stream, so as for a time to distance its enemies. The water is now carefully watched by the sportsmen, and when they have tracked the animal, either by means of the mud he stirs up, or by the air-bubbles on the surface of the water, all is animation, and the dogs are encouraged in their busy search, while the huntsmen watch their opportunity to take aim with their spears when the animal next presents himself to view. If within reach, the dexterous sportsman transfixes the animal with a lunge; if not, he casts his spear at him, and when not successful in his aim, has either to wade, or swim after the spear, as it remains imbedded in the mud. Sometimes the weapon is thrown with so steady an aim that it passes directly through the otter, when both are brought to the water's edge in triumph, as we have before stated; sometimes the otter escapes the spear altogether, and becomes personally engaged with the dogs. Here a vehement struggle arises, and the animal is not often killed before he has inflicted severe, if not fatal, wounds on some of the dogs.

The quantity of fish destroyed by otters is enormous, for it is known to kill many more than are necessary for its sustenance, and it appears to prefer the head of the fish, leaving in many cases the body untouched.

Rapine and spoil
Haunt e'en the lowest deeps: seas have their sharks
Rivers and ponds enclose the ravenous pike;
He, in his turn, becomes a prey—on him
The amphibious otter feasts. . . . .
. . . . . Nor spears
That bristle on his back, defend the perch
From his wide greedy jaws; nor burnished mail
The yellow carp; nor all his arts can save
The insinuating eel, that hides his head
Beneath the slimy mud; nor yet escapes
The crimson-spotted trout, the river's pride,
And beauty of the stream. Without remorse
This midnight pillager, raging around
Insatiate swallows all. The owner mourns
The unpeopled rivulet, and gladly hears
The huntsman's early call.

Otter-hunting is pursued with much ardour in Scotland and in Ireland. In the latter country, where the grossest superstition still prevails amongst a large class of the peasantry, a strange creature is reported to inhabit their lakes and rivers, which they call the *master-otter*. He is supposed to be endued with amazing virtues. Where a portion of his skin is, the house cannot be burned, or the ship cast away, and neither steel nor bullet will harm the man who possesses an inch of the precious material. The narrators cannot depose to their ever having been fortunate enough to see one themselves, but there is a story current among them of one having been killed by three brothers called Montgomery, who from poverty became immensely rich, and whose descendants are opulent to this very day. At *Dhu-hill* one of these animals is reported to have been seen about sixty years ago, attended by about one hundred common-sized otters, who waited upon the master like dutiful and loyal beasts.

The ravages committed by otters make it necessary to have recourse to other methods of taking them, when hounds trained for the purpose are not at hand. As the animal rejects every kind of bait, a trap is employed which is covered with mud, and rendered invisible to him. This is placed near the landing-place of the otter, which may always be detected by the scales and other portions of fish scattered about. As soon as the trap strikes, the otter plunges into the water carrying it with

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him, and is soon carried by its weight to the bottom of the stream.

There is not enough of variety in the details of otter-hunting to make it necessary for us to dwell further on them; we therefore proceed to the natural history of the otter. From the nature of the otter's food, and from the animal being so much an inhabitant of the water, it has been a question among those who possessed but little knowledge of natural history, whether he was of the nature of a land animal or a fish. Thus we find the following conversation between one of Isaac Walton's anglers and a huntsman engaged in the pursuit of the otter: "I pray, honest huntsman," inquires Piscator, "let me ask you a pleasant question; do you hunt a beast or a fish?" "Sir," replies the otter hunter, "it is not in my power to resolve you; I leave it to be resolved by the college of Carthusians, who have made vows never to eat flesh. But, I have heard, the question hath been debated among many great clerks, and they seem to differ about it; yet most agree that her tail is fish; and if her body be fish too, then I may say that a fish will walk upon land; for an otter does so, sometimes five or six or ten miles in a night to catch for her young ones or to glut herself with fish. And I can tell you, that this dog-fisher, for so the Latins call him, can smell a fish in the water a hundred yards from him." The above allusion to the Carthusians, relates to the fact, that the brotherhood of that monastery at Dijon, though prohibited the use of animal food, were permitted to eat the flesh of the otter on *maigre* days.

The place assigned to the otter in Cuvier's system is near the sub-division of polecats and martens, from which animals it presents but little deviation, except that the teeth are more developed in certain parts, the feet webbed, and adapted for swimming, and the tail flattened horizontally. Otters are aquatic in their habits, but are incorrectly termed amphibious animals, since they are not furnished more than other animals with the power of breathing both air and water in the same stage of their existence. They feed principally on fishes, but they sometimes prey on the smaller mammalia, which inhabit the banks of lakes and streams. The flattened tail of these animals appears to be rather an organ of ascent and descent than a propelling organ, and the forward motion is effected chiefly by strokes of the feet. The otter's tail is covered with longer and coarser fur than the body, but there are, generally speaking, two kinds of fur, one consisting of long shining hairs, mostly of a brownish colour, the other woolly, much shorter and thicker, and generally of a greyish hue. The character of the fur, however, differs with the climate: the farther north the animal is found, the more valuable, because the more dense and silky is its fur. Otters are in a great measure indifferent to cold and moisture. Their fur has the same property as the feathers of diving birds in not becoming wetted. On the occasion of a rapid frost in cold countries, they are sometimes driven out from their recesses, and are then hunted with much success.

The Common Otter (*Mustela Lutra*) is found in all parts of Europe, and in the colder parts of Asia and America. It averages about two feet in the length of its body from the nose to the tail, and the tail itself is sixteen inches long. It is very short on the legs, and has a singular aspect, owing to its large flat head and short ears. The eyes are very small, and placed near the nose; the neck is thick; the general colour of the animal is blackish brown, with a white spot under the chin and a small one on each side of the nose. The nostrils are provided with an apparatus which prevents the water from entering when the animal moves speedily along.

"The otter," says Pennant, "shows great sagacity in forming its habitation; it burrows under-ground in the banks of some river or lake, and always makes the entrance of its hole under water, working upwards towards the surface of the earth, and before it reaches the top, it adopts the fashion of builders of houses for ourselves, who make several floors to accord with the necessities and conveniences of the occupants. It finishes its lodge by making a minute orifice for the admission of air, and the more effectually to conceal its retreat it contrives to make even these little air-holes in the midst of some thick bush." Though this dwelling of the otter is always in a moist situation, the animal takes care to have a dry place to which it can resort; and thus, when the water rises and overflows part of its habitation, it has only to take to an upper story. Though the limbs of the otter seem peculiarly adapted for the water, yet it moves with facility on shore likewise, and may even be said to run rapidly.

The young otters first make their appearance about the beginning of April. They are generally four in number, and are attended by the mother with great assiduity and caution. The affection of the female otter for its young is so great, that she will often suffer herself to be killed rather than desert her progeny. Professor Steller, informs us, that when the young ones are taken away from the mother, the latter will follow the person carrying them off, and manifest her sorrow by crying, almost like a human being, while the young otters also cry out for aid in a tone of voice very much resembling the crying of children.

On one occasion, (he writes,) when I had deprived an otter of her progeny, I returned to the place eight days after, and found the female sitting by the river, listless and desponding, who suffered me to kill her on the spot, without making any attempt to escape. On skinning her, I found she was quite wasted away with sorrow for the loss of her young. Another time I saw an old female otter sleeping by the side of a young one, about a year old. As soon as the mother perceived us, she awoke the young one, and enticed him to betake himself to the river; but as he did not take the hint, and seemed inclined to prolong his sleep, she took him up in her fore-paws, and plunged him into the water.

The otter is naturally of a very ferocious disposition, but when taken young, and properly treated, there have been instances of its becoming so tame as to be employed in fishing for its master. We find an allusion to the taming of the otter in the following lines.

> Should chance within this dark recess betray
> The tender young, bear quick the prize away.
> Tamed by thy care the useful brood shall join
> The watery chase, and add their toils to thine.
> From each close lurking hole shall force away,
> And drive within their nets the silver prey:
> As the taught hound the timid stag subdues,
> And o'er the dewy plain the panting hare pursues.

In taming the otter, the disposition of the animal seems greatly to depend on the sort of food with which he is provided. If he is supplied with animal food, especially his favourite food of fish, at too early an age, he becomes sulky, disobedient, and vicious; but if he is suckled along with young puppies, as is sometimes done, or fed upon bread and milk, he remains gentle and docile, and will even show considerable attachment, with some knowledge of places and persons. In proof whereof we give the following anecdotes.

A person near Inverness, procured a young otter, and brought it up on milk diet. It became so tame as to follow him wherever he chose, and, if called by its name, it immediately obeyed. When fearful of danger from dogs, it sought the protection of its master, and would seek to spring into his arms for greater security. It was frequently employed in taking fish, and would sometimes take eight or ten salmon in a day. If not prevented, it always made an attempt to break the fish behind the anal fin, which is next the tail; and as soon as one was taken away, it always dived in pursuit of more. It was equally dexterous at the sea-fishing, and took great numbers of

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young cod and other fish there. When tired it would refuse to fish any longer, and was then rewarded with as much as it could devour. Having satisfied its appetite, it always coiled itself round, and fell asleep, in which state it was generally carried home. Another person kept a tame otter with his dogs, and the animals were upon the most friendly terms. It is not a little remarkable, that even dogs trained to hunt the otter would not offer this tame one the least molestation, and even showed no reluctance to hunt any other otter while their favourite was in their company.

Bishop Heber relates that in India he saw a number of otters tethered to stakes along the edges of the water and made use of as hunters of the fish, which they pursued so adroitly as to drive them into the nets and there only. The largest fish they laid hold of and brought to the shore.

FRESH-WATER FISH.

No. IV. The Jack or Pike.

Our plenteous streams a various race supply,
The bright-eyed perch with fins of various dye;
The silver eel, in shining volumes roll'd;
The yellow carp, in scales bedropt with gold;
Swift trouts, diversified with crimson stains,
And pikes, the tyrants of the watery plains.—Pope.

"The mighty Luce or Pike," says Walton, "is taken to be the tyrant, as the salmon is the king, of the fresh waters." The aspect of the pike is repulsive: it is a ragged, savage, ugly looking fish; the head large and very much depressed; the upper jaw broad and shorter than the lower, which turns up a little at the end, and is marked with minute punctures; the teeth are very sharp, disposed in the upper jaw only in front, but in both sides of the lower, as well as in the roof of the mouth and often on the tongue; the number being said to be no less than seven hundred, without reckoning the farthest of all, or those nearest the throat; those situated on the jaws are alternately fixed and moveable; the eyes are small; the gape very wide, so that the pike can seize and swallow large prey. The pectoral fins are situated immediately behind the gill openings; the ventral fins are about the middle of the body; and the dorsal and anal are far back near the tail, which is very stout, slightly forked or rather lunated. The whole structure of the fish shows that the posterior part of the body is the grand agent which enables it to rush with great velocity direct upon its prey. The usual colour of this fish is a pale olive gray, deepest on the back, and marked on the sides by several yellowish spots or patches; the abdomen is white, spotted slightly with black: when in its highest perfection the colours are often more brilliant, the sides being of a bright olive, with yellow spots, the back dark green, and the belly silvery: the gills too are of a very bright red, indicative of a vigorous circulation. The pike is said to occur in Holland of an orange colour, marked with black spots; with rather small, hard, and oblong scales. The stomach of the pike accords with its voracious habits, it being composed of membranous folds whereby it is capable of great dilation.

The names, Jack and Pike, applied to this fish, are mere verbal distinctions. The genus or rather family to which the pike belongs comprises three divisions, the individuals in one division being very unlike those of another. These divisions are *Esox*, the pike, properly so called; *Belone*, the garfish, and *Exocetus*, the flying fish.

The most prevalent character of all the fishes that have been classed among the pikes, is that of the dorsal fin being placed very far backward, so as to be close to the caudal; while the anal fin is immediately below it. The unusual disposition of these fins influences that of the others: the ventrals are thus placed in the middle of the body, or about halfway between the pectoral and the caudal: the latter is always forked; and the former, in general, pointed. The whole of these fishes are excessively voracious, and destructive to others: hence Lacepede has justly said of the common pike, that it is the shark of our ponds and rivers. We accordingly find the mouth to be particularly large, the snout often greatly lengthened, and the teeth, in nearly all instances, numerous and sharp. There is no instance of a second dorsal or adipose fin, as in the salmons; or of the belly being sharp or serrated, as in the herrings. As to other parts of their structure, it may be mentioned, that the margin or edge of the upper jaw is formed by the intermaxillary bones; or, at least, when this is not the case, the maxillaries are without teeth, and partially concealed. Excepting the common pike, and a few others nearly allied to it, the whole of the remainder are marine fishes.—Swainson.

In the *Saturday Magazine*, vol. ix., p. 153, several instances of the voracity of the pike are recorded, to which we may add a few more.

The following anecdote is related in Fuller's *Worthies*:—

A cub fox, drinking out of the river Arnus, in Italy, had his head seized on by a mighty pike, so that neither could free themselves, but were ingrappled together. In this contest, a young man runs into the water, takes them out both alive, and carrieth them to the Duke of Florence, whose palace was hard by. The porter would not admit him, without a promise of sharing his full half in what the duke should give him; to which he, (hopeless otherwise of entrance,) condescended. The duke, highly affected with the rarity, was about giving him a good reward, which the other refused, desiring his highness would appoint one of his guards to give him a hundred lashes, that so his porter might have fifty according to his composition. And here my intelligence leaveth me, how much further the jest was followed.

The voracious appetite of the pike causes it to fill its stomach with whatever it can find in the way of food: no sort of offal is refused; every kind of animal substance both living and dead is received; it will even swallow the plummet, and the clay and bran groundbait of the angler: it preys upon rats, mice, and frogs, as well as the young of ducks, geese, swans, and other aquatic birds. We read that

In the year 1798, as two gentlemen were angling in a pond near Warnham, in Sussex, a pike, of only about seven pounds weight, seized a dog that was lapping the water and was fairly landed, holding on by the dog; so also in the Blackwater, near Youghall, a yearling calf was seized by a pike, and succeeded in landing him: and there could be no greater proof of his voracity, than this attempt to swallow a calf, when his stomach, upon being opened, was found to contain a large perch and a water-rat, both entire.

The pike is so much accustomed to overcome and devour every other fish that it encounters, that it seems almost to have lost the instinct of discrimination, for it will devour its own progeny with as little reluctance as any other. It has also been known, when excited by hunger, to contend with the otter for its prey; but, as Walton says, "It is a hard thing to persuade the belly, because it has no ears." The digestive powers, too, of the pike are as remarkable as its greediness. Walton says, that a pike will devour a fish of his own kind "that shall be bigger than his belly or throat will receive, and swallow a part of him, and let the other part remain in his mouth till the swallowed part be digested, and then swallow that other part, that was in his mouth, and so put it over by degrees." It cannot perhaps be denied that the pike sometimes appears thus with the tail of a fish hanging from its mouth, for the portion that enters the stomach is quickly dissolved, and the rest soon follows; but still the act of respiration must be carried on, for which purpose sufficient space must be left within the mouth for its action to inhale the water, and to pass it through the gill-fringes with freedom, without which, strangulation would ensue. "We therefore conceive," says Mr. Blaine, "that such a bait could be only thus partially swallowed, as would not obstruct the action of the mouth and gills. Indeed there are not wanting instances

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in which both pike and jack have been effectually choked by too large a bait."

With abundance of food the pike grows rapidly; often attains an enormous size, and is scarcely injured by any foulness of the water. The famous pike caught by Colonel Thornton, in one of the Scotch lakes, in the year 1784, measured four feet four inches from eye to fork, and weighed nearly fifty pounds. The colonel had him upon the line for an hour and a quarter before his strength was exhausted, and the tackle would not have held him if the colonel had not been in a boat, so as to humour him by rowing: the colonel says, that on opening his jaws, "so dreadful a forest of teeth, or tusks, I think I never beheld." In some of the Irish rivers, pike of seventy pounds' weight have been caught. Major Bingham relates, that a pike was taken from the Shannon, which, when weighed, "somewhat exceeded ninety two pounds." But these and many other examples of extraordinary dimensions of pike are exceptions to the general average. The natural term of their lives is not known; but Mr. Blaine says, that individual fish have been familiar to persons forty or fifty years. Their majority, he adds, should be computed from the time they change their diminutive title of jack for that of pike, which is stated to take place when they have attained to a linear measurement of twenty-two inches, or to a bulk equal to three pounds; but it is more common among anglers to call all under five pounds *jack*, and all above *pike*.

During the summer months the digestive organs of the pike and jack are somewhat torpid; and their abstinence is no less singular at this time than their voracity at other times. It is remarkable too that this abstinence occurs at about the season of spawning; and the circumstance is fortunate, as Mr. Blaine remarks, for were the appetite as usual, few young fry could escape: "during the summer they are listless, and affect the surface of the water, where, in warm sunny weather, they seem to bask in a sleepy state for hours together; and at these times they frequently get snared by the wire-halter of the poacher. It is not a little remarkable also, that smaller fish appear to be aware when this abstinent state of their foe is on him; for they, who at other times are evidently impressed with an instinctive dread at his presence, are now seen swimming around him with total unconcern. At these periods no baits, however tempting, can allure him; but, on the contrary, he retreats from everything of the kind. Windy weather is alone capable of exciting the dormant powers; and thus, if a cool sharp breeze springs up, he may be sometimes tempted to *run;* but even then he will rather play with the bait, and may be seen even sailing about with it across his mouth; after doing which he commonly ejects it. This inaptitude to receive food with the usual keenness, continues from the time they spawn, until the time of their recovery from the effects of it; and thus pike and jack fishing are not often productive of much sport between March and October." Mr. Blaine is disposed to think that the decreased voracity of these fish during the heats of summer, is, in some measure, likewise influenced by the increase of temperature. The animal thrives best in frigid climes, and the further we proceed north within certain limits, the larger is his growth: thus, in the Canadian lakes, the pike exists in vast numbers, and grows to the length of four and five feet; and he does the same in the cold waters of Lapland also, disappearing, according to Wahlenburg, in geographical distribution with the spruce fir.

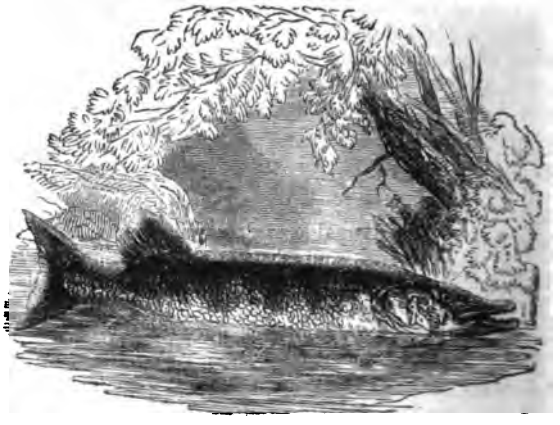
The spawning time of the pike and jack is March or April, according as the season is more or less advanced, and depending also on the situation of the water. They proceed in pairs from the rivers to the creeks and ditches: but when confined in still water they seek the most retired part, often a weed-bed, or remain near the shallows and deposit their ova among aquatic plants, such as the reed and the rush. When the operation is complete they retire to the deeper waters, leaving their spawn to supply new races of their kind, or as a prey to many aquatic animals such as the duck, which is particularly fond of the spawn of the pike. It is said that this bird not only consumes great quantities of it, but carries it off adhering to the feathers, without its being injured or having its vitality destroyed; by which means pikes have often appeared in ponds where there were none before; a fact which gave rise to many conjectures before this simple explanation was discovered.

The pike are fond of dull, shady, and unfrequented waters, with a sandy, chalky, or clayey bottom. In summer they are found among or near flags, bulrushes, and water docks. They seldom seek a rapid stream; their favourite retreat being in the vicinity of a whirlpool or sharp bend of the stream. In winter they retire into the depths, under clay banks, or under a projecting stone or stump of a tree.

The young fry grow rapidly and are said to attain the weight of two pounds during the first year, and to gain a pound or more every subsequent year. This may perhaps be true up to a certain stage of growth; but so plentiful are tales of wonder in Natural History that it becomes necessary to exclude a variety of newspaper and other relations of pike, as well as of other animals, remarkable for size and weight as well as extraordinary age or sagacity. This exclusion may, it is true, make us often lose a good story, which, however, unless accompanied with a caution, (and this generally spoils the story,) had better be left untold. The story told by Gesner is often repeated, that a pike was once caught at Heilbrun, in Germany, which had a brass ring attached to it, intimating that it was put into the lake in the year 1230; so that being captured in 1497 it must have been 267 years old.

One would have been incredulous on this subject, (says Mr. Swainson,) but Gesner further asserts that the skeleton, nineteen feet in length, was long preserved at Manheim as a great curiosity. It would be well worth the trouble of inquiry, if any fragments of this gigantic monster are yet in existence, or if any records regarding it exist at that place: for ourselves, we confess our entire disbelief that such a pike, and of such an age, ever existed.

There is a curious method, according to Pennant, of taking pike in the fens of Lincolnshire. The fishermen use a basket open at the top and bottom; this they plunge down behind the stern of their punts or fen-boats, and by poking with a stick, ascertain whether there is a fish or not; if there is one they immediately raise the basket, and, throwing the fish into the punt, lower the basket to catch another.



THE PIKE, *Esox Lucius*

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THE

Saturday Magazine.

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THE BANKS OF THE THAMES.

THE SOURCE OF THE THAMES.

Thou, too, great father of the British floods!
With joyful pride survey'st our lofty woods,
Where towering oaks their growing honours rear,
And future navies on thy shores appear,
Not Neptune's self from all her streams receives
A wealthier tribute than to thine he gives.
No seas so rich, so gay no banks appear,
No lake so gentle, and no spring so clear,
Nor Po so swells the fabling poet's lays,
While led along the skies his current strays,
As thine.——POPE.

How many and varied are the associations which the name of the river Thames suggests to the mind! How proudly may we compare this river with those which water foreign lands, and point to its commercial importance as a compensation for its comparatively limited size! It is no exaggeration to say, that more wealth floats on the bosom of this river than on any other in the world, and that no other river is visited by the natives of so many climes.

But it is not only in a commercial point of view that the Thames demands our notice. Its banks are studded with beautiful towns, villages, fields, gardens, and country residences, giving to the scenery all those characteristics which mark a highly cultivated country. These objects are well worthy of a little attention, and we propose, in the course of a series of articles, to take a rapid glance at the chief objects of interest which present themselves, from the source of the river, in Gloucestershire, to its termination in the English Channel, as also the associations connected with places situated on its banks.

The general course of the Thames is from west to east, passing through or between the counties of Gloucester, Wilts, Berks, Oxford, Buckingham, Surrey, Middlesex, Essex, and Kent. It derives its origin from a copious spring, called the *Thames Head*, about three miles south-west of the town of Cirencester, in Gloucestershire. The river is generally known by the name of the Isis, until it receives the waters of the Thame in Oxfordshire, after which it is called the *Thames*,—a name supposed to be compounded of the other two. From its source it flows as a small rivulet to Cricklade, in Wiltshire, near which it receives several tributary streams, from whence its course leads towards Lechlade, a town situated near the confines of Berkshire, Gloucestershire, and Oxfordshire, where it receives the waters of the Lech and the Colne, and becomes navigable for vessels of a hundred tons' burden, although at a distance, measured along the river, of a hundred and forty miles above London. The river then passes in succession the towns of Buscot, Farringdon, Stanton Harcourt, and Ensham, until it reaches the city of Oxford, its course hitherto having been somewhat northward. It then takes a sudden bend towards the south; and, after passing near Ifley and Nuneham, receives the river Thame on its

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northern shore. Forming the boundary between the counties of Buckingham and Berks, it passes through a beautiful country, approaching more or less near to the towns of Wallingford, Mapledurham, Reading, Henley, Great Marlow, Cliefden, Maidenhead, Windsor, Eton, Staines, &c. We then come to the counties of Middlesex and Surrey where the banks of the river show us in succession Chertsey, Sunbury, Hampton, Kingston, Twickenham, Richmond, and Kew. From this point may be said to commence the commercial character of the river, its banks being occasionally diversified with mills and manufactories of various kinds, till we arrive at the Metropolis. Passing the forest of masts and the dense masses of houses which here present themselves, we come in succession to Deptford, Greenwich, Woolwich, Erith, Purfleet, Gravesend, and a few other towns,—till at length the river, now presenting a majestic breadth, pours its waters into the sea, after a course of somewhat more than two hundred miles. Such being the course which the river pursues, we proceed to notice the objects met with by the way.

The spring to which the river owes its origin rises in a field in the parish of Cotes, Gloucestershire. The infant rivulet flowing from the spring passes under the road leading from Cirencester to Bath, and is joined by several other springs similar to itself, by which its width is increased to about twelve yards, and at the village of Cotes it is crossed by the first bridge, formed of a few large stones, laid in piles.

A course of about ten or twelve miles brings the stream to Cricklade, a pleasant town, containing about sixteen hundred inhabitants, and rendered famous by many contests which took place near it in the times of the Saxons: it consists principally of one long street, in the midst of a level country on the south side of the stream. A further course of about eight miles brings us to Lechlade, or Leachlade, a spot described by Leland as a "praty old village, with a stone spire to the church." The name is compounded of two Saxon words, *lech* and *ladian*,—the former signifying a stone, and being the name given to a small river which flows into the Isis at this part, and the waters of which have a slightly petrifying quality,—the latter being the Saxon verb *to empty*, in allusion to this confluence. The town is situated on the margin of the river, is neatly built, and consists principally of one long and wide street, inhabited by about twelve hundred persons. The river begins to be of importance at this place, for Lechlade is a stopping-place for wagons, laden with cheese and other commodities from Wiltshire and Gloucestershire, the rest of the transfer to the Metropolis being effected by navigation. Vessels of sixty tons' burden are capable of reaching this spot, but the frequent deficiency of water in the summer, as well as the floods in winter, have rendered the navigation of the river rather uncertain, and not so valuable to the inhabitants as it would otherwise have been. About half a mile on the London side of the town is St. John's bridge, considered to be one of the most ancient bridges on the Thames, and built at the time when a priory was flourishing in the immediate neighbourhood, several centuries ago; the bridge is of very curious form and of great strength.

Still continuing our course, pretty nearly in an eastern direction, we pass about midway between the towns of Farringdon and Bampton, the former lying southward, in Berkshire, and the latter northward, in Oxfordshire. Farringdon is a very ancient town, small, neat, well-built, and paved, and the navigation of the neighbouring river furnishes a medium for the conveyance of coal and other heavy articles from Gloucestershire and Somersetshire to London. The Great Western Railway, however, which has a station near Farringdon, is likely to affect considerably the navigation of the Thames at this part. Farringdon is not far from the celebrated Vale of the White Horse, a name derived from the figure of a white horse, cut in the chalky soil, and kept clear from grass. The popular opinion respecting this figure is that it was formed in commemoration of a victory obtained by Alfred the Great over the Danes.

Bampton, situated on the opposite side of the river, is a very ancient town, containing about fifteen hundred inhabitants, and situated near the banks of the river, on which there are many convenient wharfs.

The road from Farringdon to Bampton crosses the Thames at Radcote bridge, an object not only picturesque in appearance, and curious from its antiquity, but interesting also from historical recollections. It was the scene of a remarkable battle, fought, in the year 1387, between the Earl of Derby, afterwards King Henry the Fourth, and De Vere, earl of Oxford. The latter was defeated, but saved his life by plunging on horseback into the Thames, and swimming to the opposite bank,—an exploit which has been commemorated in the following stanza of the poem of *The Thame and the Isis*.

> Here Oxford's hero, famous for his boar,
> While clashing swords upon his target sound,
> And showers of arrows from his breast rebound,
> Prepared for worst of fates, undaunted stood,
> And urged his beast into the rapid flood:
> The waves in triumph bore him, and were proud
> To sink beneath their honourable load.

Mr. Ireland, who described the Thames half a century ago, when projects of canal-cutting were as much in favour as the construction of railroads at the present day, regretted the deserted appearance presented by the Thames, in consequence of the removal of its traffic to the canals. He says,—

> Useful to the commerce of the country, and laudable as the enterprise of forming navigable canals all over the kingdom must be acknowledged to be, it is still with some regret we view the old stream falling almost into total neglect and disuse. Such, however, in this neighbourhood, [*i.e.* near Radcote Bridge,] during the summer months is the situation of this noble river, which is then shallow in water, and overgrown with osiers and weeds; its locks and weirs are fast falling into decay; and in many places we find only a few old timbers remaining, to mark where such aids to navigation were once thought of utility.

The *weirs* here alluded to are a primitive kind of lock-gates, frequently seen in the higher parts of the Thames. They are artificial dams or banks, carried across the river in order to pen up the water to a certain height, for the services of the mill, the fishery, or navigation. A large range of frame-work, which resembles the railing of a bridge, rises from the bank below, and supports a number of small flood-gates, sliding in grooves, and connected with a sill in the bottom. When these are drawn up, the whole body of the stream, being collected into a narrow space, rushes through with great rapidity, and gives a temporary depth to the shallows, or, by the power of the current, forces the barges over them. These weirs add much more to the beauty of the landscape than the more still and mechanical locks of a canal. They are generally connected with various accessory and diversifying circumstances: a mill, a fisherman's hut, or the cottage of a toll-collector, sometimes embowered in trees on the bank of the river, heighten and vary the beauties of the scene. The weir, in its most simple state, breaks the line of the river, produces a kind of waterfall, and gives activity and eddy to the current; but when the river is high, the overflow of the water forms a large cascade. The upper stream continuously forces its way onwards, "in some parts," as it has been observed, "spouting through the apertures of the flood-gates; in others fretting through the moss-grown timbers, or rushing over the aquatic plants that cling to the frame work; and thus, broken into a thousand various rills, falls into the lower water, and continues to enliven the course of the river."

We now arrive at a part of the river which receives the waters of the Windrush, a stream which traverses

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Oxfordshire, and passes the town of Witney before discharging itself into the Thames. Witney has long been famous for the blankets manufactured there, and it has been supposed that the whiteness of these blankets is due to the large quantity of nitre which is found in the water of the Windrush. Farther on we come to Stanton Harcourt, a small town celebrated for the events which occurred there many centuries ago, and for the venerable residence of the Harcourt family. This mansion was in the possession of the Harcourts for more than six hundred years, the representative of the family being created a baron in the reign of Queen Anne, and an earl in the year 1749. The mansion has been greatly altered in modern times. A small chapel belonging to the building had a tower containing three apartments, the uppermost of which was called Pope's study, from the circumstance of the poet having occupied it during a whole summer which he spent at the mansion. Here he finished his translation of the fifth book of Homer's Iliad, which circumstance he recorded, with a diamond on a pane of red glass, subsequently preserved with great care by the owner of the mansion.

Proceeding further eastward on our journey, we come to Eusham Bridge, an object surrounded with picturesque scenery. The river expands considerably about this part, and meanders amid the neighbouring meadows, fertile in pasture, and screened by the contiguous hills, which form a gentle slope towards its margin. On the northern side the various breaks in the distant scenery, the happy combination of villages with pastoral country, give great beauty to the landscape.

A little eastward of this bridge, the river takes a very sudden bend towards the south near the town of Woolvercott; increasing both in width and depth towards Oxford, and, to use the words of an old topographer, "seems proudly urging its course, to pay its tribute to that ancient and noble seminary of learning, whose venerable towers and lofty domes all happily unite to form a general mass of objects superior to anything which this country can boast."

We have approached a part of the river nearly parallel with Woodstock and Blenheim, at a few miles from the northern bank; but these celebrated places, and their historical recollections, we must leave for our second paper.

ON OPTICAL ILLUSIONS.

No. I.

It would be a curious inquiry, and one fruitful in valuable information, to investigate the instances in which, and the causes by which, natural objects appear to be what they are not. Such an inquiry would lead to many remarkable results, and would serve to furnish some evidence of the manner in which our notions of form and configuration originate. We wish to draw the attention of those readers who have but recently entered on the study of science, to this subject, assuring them, at the outset, that they will be amply repaid for the time employed in the inquiry.

If we analyse our notions of form and figure, we shall find that we depend almost entirely on the kind and degree of light which is reflected to the eye from any object under consideration. If we have, for instance, a marble bust, and a chalk or Indian ink drawing of the same individual, how do we know, without touching them, (for that is a species of evidence, which we exclude from the present inquiry,) that one is a raised bulk, while the other is a flat surface? Principally from the degree of light which comes to the eye from the different parts of the object. We know—experience has taught us—that every projection or elevation reflects more light from that side which is nearest to a window, or to a lighted candle, than from the other side; and upon placing one of the objects above alluded to in different positions with regard to the window, if we find that the dark side of every elevation in the face is directed from the window, we immediately conclude that that is the bust and not the drawing; but if we find that, when we place it at one side of the room, the shaded part of the nose, or of any other prominent part, is towards the window, but that when it is on the other side of the room the shaded part is from the window, we immediately conclude, without placing the hand on either object, that we are looking at the drawing, and not at the bust. And this would be the case if the drawing were coloured precisely to imitate the bust. This is a circumstance which should always be attended to in placing a portrait in a room; if the painted shadows do not correspond with the positions of the real shadows on that side of the room the illusion is greatly lessened.

These remarks apply to elevations above the common surface of an object, but our notions of depression are formed exactly in a similar way. We should find that if we could change the appearance of every spot in a raised object from light to dark, and from dark to light respectively, the mind would at once determine that we were then looking at a depressed or hollow cavity, the exact type of the raised object which we were before regarding; we should find that no other element would be called for in fixing our ideas.

Sir David Brewster has beautifully illustrated this singular fact by referring to the effect produced on the appearance of an intaglio (sunken device), or a cameo (raised device), when viewed through a microscope, or any assemblage of lenses which inverts the object.

If a common seal, or intaglio, be held near a window, the parts farthest from the window receive most light; while if the cast or impression produced from that seal, which may be regarded as a cameo, be similarly viewed, the parts nearest the window will receive most light; and it is in that way that we immediately know the elevated from the depressed image.

Now, the effect of viewing this same seal through a microscope, is to invert the position of the object; and consequently, if we confine our attention to any given depressed point of the seal, we should find that the light and the dark sides of that depression had changed places, and the shaded side of every little elevation and depression would be exactly in the same position as if we were viewing a cast of the seal without a microscope.

It will even be found that a very slight effort of the mind will be sufficient to produce this effect without any lenses whatever: suppose an intaglio be viewed at night, with a candle at the left of the observer; let him then fancy that the candle is on his right hand, and the idea that he is viewing a cameo will immediately impress itself on his mind. That the direction of the shadow is the real evidence on which we form our opinion as to the character of the surface which we are viewing, is farther borne out by this fact: that if we hold an intaglio and a cameo exactly opposite to the source of illumination, it is difficult to distinguish one from the other, as both sides of every elevation or depression are nearly equally illuminated.

If we consider for a moment, in what way we distinguish a concave from a convex surface, we shall find that it merely consists in a different distribution of light and shade: those parts which are light in the one, being shaded in the other and *vice versâ;* the deception produced in objects of this form, by inverting the position of the image, is most striking, and affords one of the best instances of the fallacy of our reasoning, when we lose one of the data on which we ground our inferences.

If we take any bright convex or concave surface, no matter what the material, and place it between the window and the eye, so that the eye sees it by looking downwards at an angle of from 20° to 60°, there is a certain distribution of light and shade on the object,

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which enables the eye, from habit, to determine whether it be convex or concave; if we can now invert the position of the edges of the object, with reference to the eye and the window, the shaded parts assume just the position which would be assumed by the opposite curvature. This inversion may be done without any lenses whatever. Take a common Wedgwood-ware evaporating-dish, or a common tea-saucer, a basin, or any object which is concave on one side and convex on the other—a watch-glass even will do,—and place it on a table between the observer and the window, with the concave side upwards; then hold a piece of common glass (with the under side blackened) in such a position that an image of the object will be reflected from its surface to the eye. The laws of optical reflection teach us, that the rays from the farther edge and those from the nearer edge cross each other in their passage to the eye, and assume an inverted position; and it will now be seen that the object has every appearance of being a convex surface, and if the angle of observation be well chosen, (which depends partly on the height of the window,) the illusion is so strong that it can scarcely be removed from the mind. If a convex mirror be substituted, and its position well adjusted, the distortion will present all the appearance of a concave mirror.

It is not essential to this experiment that the reflector should be black on its under surface, although it is more favourable for the purpose; any polished surface will suffice, provided it receives the rays at a large angle of incidence: it can be seen very well by reflection from one of the faces of a prism, and a singular effect is produced by a particular adjustment of the prism, by which two images of the same object may be conveyed to the eye within a short distance of each other; one is the regular refracted and transmitted image, and the other a reflection from one of the internal faces of the prism: one of these images will appear convex, and the other concave, and their juxtaposition forms a very remarkable appearance—one being prismatically coloured and convex, and the other of its natural colour and concave.

If the student in optics carefully considers the law that "the angles of incidence and reflection are always equal," and will carry out that principle to its fullest extent, he will find that every one of the phenomena of which we have been treating depends almost solely on the operation of that law; if he considers the position of the source of illumination, the degree of curvature of the surface on which any ray falls, and the angle at which the eye receives the reflection, he can clearly show that that law determines what part of the object will appear bright and what part shaded.

In a memoir submitted by Professor Wheatstone to the Royal Society, two or three years ago, he enters at considerable length into the causes and nature of many phenomena connected with vision; and among them are the relative appearances of an intaglio and a cameo. But the results to which that gentlemen arrived, and which we shall briefly explain in a future paper, do not disturb the results described in the last few paragraphs: we are treating of that class of illusions arising from shadows, and their relative position with regard to the light parts of an object; but Mr. Wheatstone's experiments relate to a more extensive and highly curious comparison between the phenomena observed with one eye and those observed when both eyes are open. But more of this hereafter: the details of our present article are equally true, whether one eye or both eyes be employed.

The optical law to which we have alluded, namely, that "the angles of incidence and reflection are always equal," determines the production of another phenomenon, as remarkable and much more beautiful than the former. If we take a plate of looking-glass, and sprinkle a few grains of dust upon it, and view it perpendicularly with one eye at a few inches' distance, the dust appears arranged in a most beautiful radiating star, of which the eye is the centre; it matters not how unequally it is scattered; the symmetry is invariable.

Now in such a case as this, before we begin to theorize, it is proper to extend the experiment to other objects; and in accordance with this, it will be found that if the object be a polished surface of steel, of silver, of mercury, or any substance but silvered glass, no such radiating appearance presents itself; if now the student reverts to the law above alluded to, he will at once detect the cause; when the dust is scattered on the surface of silvered glass, an image of each little particle is reflected from the *mercurial surface*, through the glass again to the eye; as the angle at which we view any particle increases, so must the apparent distance between it and its image increase, until we arrive at 45°, which gives the maximum of distance.

Now the particle and its reflected image are in the same vertical plane which passes through the eye and the image of the eye; the particle, its image, and the image of the pupil of the eye appear, therefore, to be in the same right line, and as the same applies to every particle, as the line which joins the particle and its image would pass, if produced, through the image of the pupil of the eye, wherever the particle be placed, the pupil appears to be a nucleus or centre from which all these double images extend radially outwards.

When, however, a polished metal is used, there is no reflecting surface from which a second image can be obtained, and we therefore see the particles themselves unaccompanied by any reflected image, and the symmetrical appearance is not then produced. The employment of a concave mirror affords an excellent proof that this beautiful radiating appearance is the effect of reflection. If we hold the eye at the focus of the mirror—that is, at the centre of the sphere of which the mirror is a section—we see none of these radial lines, but as we approach near to the mirror, they gradually develope themselves; this arises from the circumstance, that when the eye is at the centre of the sphericity, incidence and reflection are both perpendicular to the mirror, or rather, the reflected image is concealed by the particle itself, and therefore cannot reach the eye; but when we approach nearer, the images of the lateral particles become visible, and the starry effect begins to appear.

In a *convex* mirror the effect is very beautiful, on account of the increased obliquity which its curvature gives to the incident ray, and the non-existence of a focal point in front of the mirror.

The effect is greatly heightened by mixing powders of two different colours,—red and green, or blue and orange, for instance,—as those colours which are complementary to each other produce a singularly pleasing effect by their juxtaposition. A very slight sprinkling of milk, or any coloured liquid, likewise produces this symmetrical effect.

Instead of using glass, we may use two fluids of different densities and different refractive powers, but the two which best answer the purpose are water and mercury; if a little powder be sprinkled on the water, it will be reflected from the mercury under the water, and the same effect produced as with glass, but the latter is the more convenient of the two.

If the eye be directed to one corner of the glass, the particles will have the appearance of an expanded fan, emanating from that corner.

Thus may the same simple law be brought to bear upon the whole of the appearances which we have now detailed: in all these instances an object, or an assemblage of objects, appear to be what they are not, simply from our neglecting to seek for an explanation from the only sources to which we should apply in such cases, namely, the unerring laws of Nature, the simplicity of which is as conspicuous as their beauty and their universal application.

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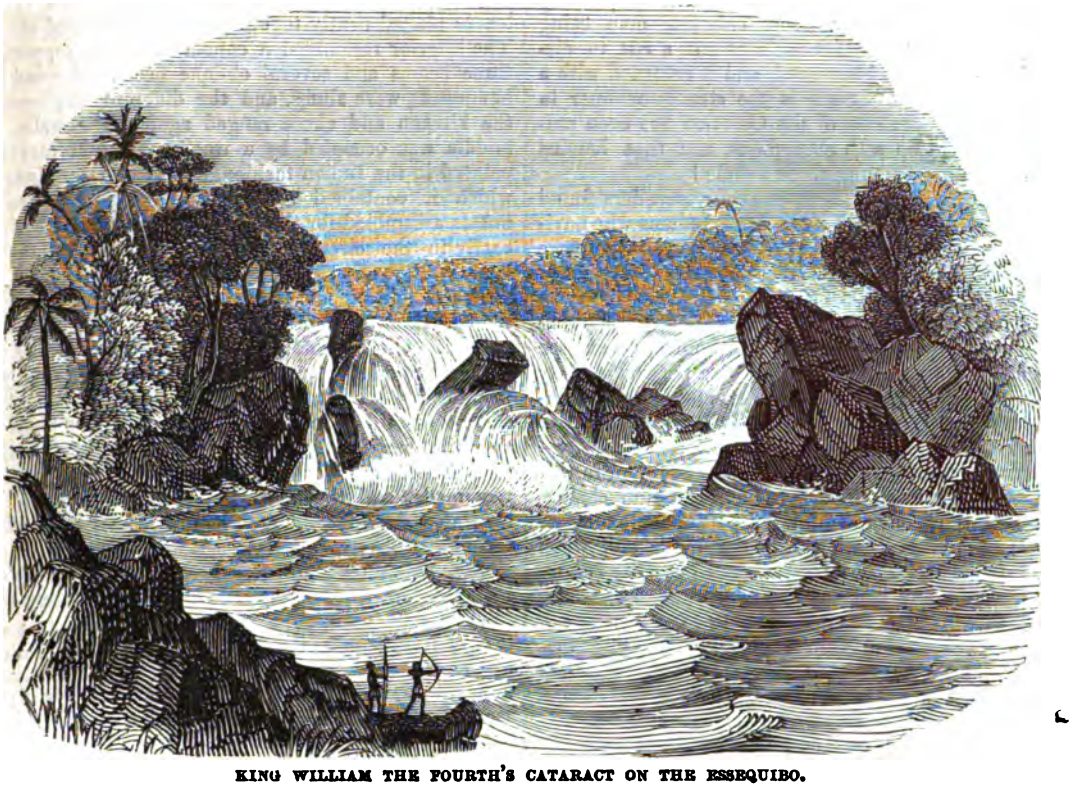
BRITISH GUYANA.



KING WILLIAM THE FOURTH'S CATARACT ON THE ESSEQUIBO.

IV. Ascent of the Essequibo.

In our last paper on Guayana we traced the principal objects worthy of note on the river Massaroony. We now start from the point where that river enters the Essequibo, and accompany Mr. Schomburghk in the ascent of the latter river.

This gentleman was accompanied by two other Europeans, nine negroes, and ten Indians, who embarked in three *coorials*, or canoes. The party proceeded up the river, meeting with but few traces of man's works, but abundant examples of the beauties of natural objects. Here a rapid occurs,—there a sand-bank gives a tortuous course to the river,—farther on are banks covered with luxuriant vegetation. Opposite a small island in the river, called Hoobucuroo, there is one dense mass of foliage, arising from trees of almost innumerable growths; among which are the majestic *mora*, with its dark-leaved branches,—the mimosa, whose wood is almost equal to oak for ship-building,—the stately saouari, which bears a rich and nutritious nut,—the sirwabally, excellent for planking vessels and resisting the attack of worms,—the water guava, which replaces the mangrove of the seashore, and yields an aromatic leaf, useful as a medicine, and many others. Mr. Schomburghk also observed how frequently small parasitical plants had wound themselves round larger stems. The wild vine, or bush-rope of the colonists is seen at times twisted like a corkscrew round the loftiest trees, intertwined like the strands of a cable, then drooping to the ground, and again taking root, and thus, as it were, securely anchoring the tree against the fury of the sweeping blast. Sometimes too may be seen the wild fig-tree, an unusual parasite, taking root in some of the topmost branches of the *mora*, deriving nourishment from its sap, and being, in its turn, entwined by varieties of the climbing vine.

Farther up the river the travellers met with a party of natives,—men, women, and children: the women were employed spinning cotton for hammocks, in a hut open on all sides, and badly roofed with palm-trees. Cotton, dipped in bees'-wax, afforded artificial light in the evenings.

About twelve years ago Lieutenant Gullifer and Mr. Smith ascended the Essequibo, and met with some of the natives under circumstances which show how grievously low is the state of their civilization. We must remark, however, that the individuals to whom the following narrative relates, were not the regular American Indians of Guyana, but belonged to the more fierce tribes called Caribs.

The travellers being received courteously by the chief of the tribe, a dish of fish, with savoury sauce, was placed before them, which being removed, two human hands were brought in, and a steak of human flesh. The travellers, as may be supposed, declined to eat of such food, but the chief picked the bones of the hands, apparently with great relish; and he afterwards said to his visitors—"Human flesh makes the best sauce for any food: these hands and the fish were all dressed together. You see these Macooshee men, our slaves; we lately captured these people in war, and their wives we eat from time to time." The travellers were horrified, but thought it prudent to conceal their feelings, and before they retired for the night they remarked that the Macooshee females were confined in a large logie, or shed, surrounded with a stockade of bamboos; and the whole aspect of affairs afforded reason to believe that the sickening recital was but too true.

It is instructive to observe how generally and almost universally prevalent is the idea that at some past period in the history of the world the surface of the globe was inundated by a deluge. An instance of this kind is furnished by the Arawaks of Guyana. Their tradition of the Creation is that the Great Spirit sat on a silk cotton-tree, and cut off pieces of bark, which he threw into the stream below him, and, becoming animated, they assumed the forms of all animals; that man was last of

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all created; that a deep sleep fell upon him; that he was touched by the Great Spirit, and found, when he awoke, a wife by his side. The world becoming desperately wicked, was drowned by a flood, only one man being saved in a canoe, from which he sent out a *rat*, to discover if the waters had subsided, and it returned with a head of Indian corn. Such is the strange manner in which the Mosaic account of the Creation has been mutilated and mixed up with absurdities, and thus handed down as a tradition among these people!

In proceeding up the Essequibo our travellers found a curious custom to prevail among the Indians who navigated the canoes. Whenever they came to a place which the Indians had not visited before, they had tobacco-juice squeezed or squirted into their eyes,—to avert the Evil Spirit! This was done on the occasion of arriving at a remarkable pile of large granite boulders, near the banks of the river. The boulders rise perpendicularly to the height of about a hundred feet, and appear to enclose a large cavity, partly covered by a square mass of granite.

Among the numerous trees and plants found in this neighbourhood, is that which produces the gum elastic; the wood of which has much the appearance of the sycamore. The gum is contained in the bark; and when the latter is cut through, the gum oozes out very freely: it is quite white, and looks as rich as cream. It hardens almost immediately on issuing from the tree; so that it is very easy to collect a ball, by forming the juice into a globular shape as fast as it comes out. It turns nearly black on being exposed to the air, and becomes real Indian rubber without any farther preparation.

Waterton speaks in enthusiastic terms of the scenery on the banks of the Essequibo. At one spot is a savannah at the edge of a forest, which he thought excelled in beauty any park in England. It consists of about two thousand acres of grass, with here and there a clump of trees, and a few bushes and single trees, scattered up and down by the hand of nature. The ground is diversified with moderate undulations; and near the middle is an eminence, gradually rising from every side, and occupied by Indian huts:—

This beautiful park of nature, (says he,) is quite surrounded by lofty hills, all arrayed in superbest garb of trees; some in the form of pyramids, others like sugar-loaves, towering one above the other, some rounded off and others as though they had lost their apex. Here, too, hills rise up in spiral summits, and the wooded line of communication betwixt them sinks so gradually that it forms a crescent; and there the ridges of others resemble the waves of an agitated sea. Beyond these appear others, and others past them; and others still farther on, till they can scarcely be distinguished from the clouds.

Amid scenes such as these, diversified with rapids, falls, shoals, and small islands, the traveller up the Essequibo finds himself; seeing no relics or traces of the "white man," but meeting here and there with small parties of the natives. At one part of his voyage Mr. Schomburghk met two canoes full of natives going to trade at the Demerara river. Their canoes were loaded with hammocks, large balls of spun cotton, bows, tobacco leaves, parrots, macaws, and other articles for barter. The chief, as a distinguishing mark, wore a crown of macaw feathers; and trafficked with the travellers, exchanging some of his commodities for scissors and knives.

When we arrive at a distance of about two hundred and forty miles from the mouth of the river, we meet with the river Rupunoony, which empties itself into the Essequibo. Up this river Mr. Schomburghk proceeded, and met with many picturesque groups of natives. At one spot, in a fine savannah, he saw a dome-shaped hut, and two smaller open ones, which were prepared for a piwarry feast among the natives. The men all came forward, and greeted him by waving the hand. He then looked in at one of the open huts, where he saw women and children occupied in baking fresh cassava bread. At his appearance, children, dogs, fowls, parrots, all set up a cry of affright; so he left them and went to inspect the dome-shaped hut. It consisted of palm leaves plaited neatly together, with a plastered entrance. The interior resembled a cupola or dome, supported by three beams and several oblique posts. Around it the hammocks were slung, and the different implements of the kitchen and chase ranged against the walls. The middle was occupied by a wooden trough, carved and painted in the Indian fashion, and filled with piwarry, of which it contained as much as sixty gallons. The guests assembled for the feast had slung their hammocks partly in the circular hut, partly in one of the open huts, while others stood outside, each party being attended by a person highly painted and ornamented for the occasion, to bring them the intoxicating liquor when wanted. On a signal given by the host, or one of the guests, the calabash was filled and handed to the person who desired it: it was then given to his next neighbour, and so on till emptied; after which it was filled again, and the same round occurred. This was continued until the trough was emptied, after which a new supply was made, and the men continued drinking until they became,—first highly elated and boastful,—and then torpid and sleepy.

Mr. Schomburghk, after speaking favourably of the behaviour of the Indians towards their children, says,—

They show much more attention to their wives than I should have expected from what I had read. I allude to the Caribbees, where the women appear to be considered more as companions than slaves. They certainly must work hard; the men clear the ground, and the women have to cultivate it, and to bring in the crop; but they are by no means the low slaves and drudges which they have been represented. There is one great failing which unfortunately appears to prevail among all the tribes—neglect of old persons, and the sick: they are stowed away in a small corner of the house, neglected, and left to themselves; and where weakness keeps them to their hammocks, perhaps often without the necessaries of life.

During the journey, the travellers occasionally crossed the savannahs, hills, and forests, to visit any remarkable spot, and on some of these occasions they had opportunities of seeing the mode of march known as "Indian file." The party, on one occasion, consisted of eighteen individuals; and as the path leading through the savannahs was not more than six or eight inches wide, each person had to follow closely in the footsteps of the one before him. Sometimes the path was lost, or became still narrower than that here indicated, but this was immaterial to the Indians; for their peculiar method of walking with the toes inward enables them to walk the smallest path with ease. They ridicule the European mode of walking, observing that in a wood we take up too much bush-room.

The exploring party ascended the Essequibo to a point where a fine cataract became visible, which, according to the opinions of all the Indians present, had never before been visited by a white man The river contracted considerably at this part: the hills approached each other from both sides; and the indentations of the opposite shores were so exactly matched, that the channel appeared to have been the work of art. After paddling up the river in canoes, the cataract was seen by the travellers. Numerous conical hills of granite, about three hundred feet in height, and covered with luxuriant verdure, contract the river to a width of fifty yards, where the whole body of water dashes down a precipice of fifteen feet; then foams over a rugged bed of rocks for about twenty yards; and again precipitates itself, ten feet, to the basin below. The rich vegetation luxuriating in all the fertility of a tropical clime,—the masses of granite projecting into the river, and hemming it in to its narrow limits,—and the foaming waters in the background, bearing away everything opposed to their progress,—combined to form a scene, more picturesque and beautiful than had been met with by the

travellers in any part of their journey. Mr. Schomburghk named this cataract after King William the Fourth, who was at that time patron of the Royal Geographical Society, by whom this expedition was planned, and to whose valuable Journal we are indebted for the illustrations to the present series.

When the travellers had returned nearly to the point whence they set out, many of their specimens of Natural History were lost by the upsetting of a boat; respecting which Mr. Schomburghk observes,—

This is too frequently the lot of the traveller. After having amassed treasures of Natural Science, and having taken every pains to preserve them, weather, accident, negligence, and malice, often conspire to deprive him of them. How frequently was I obliged to use every persuasion to induce the Indian to carry the Geological specimens collected during our pedestrian tours! I might have loaded him with provisions, wearing apparel, &c., and he would not have objected to it; but to increase his burden, by adding rocks, he thought, could only be done out of mischief; therefore I had been more than once under the necessity of carrying the specimens myself.

Nearly all the specimens here alluded to, as well as many specimens of plants and animals, were lost or spoiled by the disaster with the boat.

We need not trace the route of the travellers to the sea shore. Suffice it to say, that the banks of the Essequibo and the Rupunoony present dense forests, rich savannahs, a luxuriant display of animal and vegetable life; but that the few inhabitants consist wholly of the coloured races.

EULER, THE MATHEMATICIAN.

THERE are but few chapters in Biography more strikingly illustrative of the ardent love of knowledge, and its pursuit under circumstances of pain and difficulty, than that supplied by the life of Leonard Euler the mathematician.

This great man was born at Basle, in Switzerland, on the 15th of April, 1707. His father was minister of the village of Riechen, where Euler passed his earliest years. After receiving a good education from his father, he was sent to the university of Basle, where he soon became distinguished for his extraordinary memory and the uncommon celerity with which he accomplished his academical tasks. He devoted all his leisure to geometry, which was his favourite *pastime*. His progress in this noble department of science, gained for him the notice of John Bernoulli, then the first mathematician in Europe, as also the friendship of Daniel and Nicholas Bernoulli who were already emulous of the fame of their illustrious father. In 1723 Euler delivered a discourse in Latin on the occasion of taking his degree as Master of Arts, and the subject of his theme was the philosophy of Newton in comparison with the Cartesian system. This effort gained its author great applause. He afterwards applied himself to the study of theology and the oriental languages with considerable success; but as his ruling taste led him to prefer geometry to all other pursuits, he obtained his father's consent to adopt this in preference to any other. He continued on terms of friendly intimacy with the Bernoullis, and one consequence of this connection was his subsequent removal to the Academy of Petersburg, an institution projected by Peter the Great, and executed by Catherine the First. The two young Bernoullis being invited to Petersburg in 1725, promised Euler, who was anxious to accompany them, to exert themselves to obtain for him a settlement in that city. In the mean time he adopted their advice, and applied himself with ardour to the study of physiology and several branches of physical science. He also wrote a memoir on the propagation of sound; and an essay in answer to a prize question concerning the masting of ships, to which the Academy of Sciences, in 1727, adjudged the second rank.

The splendid talents of Euler would easily have procured for him an honourable preferment in his native city, had it not been that both civil and academical honours were distributed there by lot. Having failed in his attempt to obtain a certain situation at Basle, he went to Petersburg, where he became joint professor with his countrymen, Hermann and Daniel Bernoulli, in the university of that city. He soon added many valuable memoirs to the academical collection; and this excited a noble emulation between him and the Bernoullis, which always continued without the least interference of envy or the disturbance of their friendship. In 1730 he became professor of natural philosophy; and in 1733 succeeded Daniel Bernoulli in the mathematical chair: about this time also he married a Swiss lady named Gsell. In 1735 the academy proposed a problem, to which a speedy solution was required, but for which several eminent mathematicians had required several months. To the astonishment of every one, Euler solved it in three days; but the effort produced a fever which deprived him of the use of his right eye and nearly of his life. The Academy of Sciences at Paris, in 1738, awarded the prize to Euler, for his memoir on the nature aud properties of fire; and proposed for the year 1740 the important subject of the tides; a problem the solution of which required the most arduous calculations, and included the theory of the solar system.

Euler's discourse on this question was considered as a master-piece of analysis and geometry; and it was more honourable for him to share the academical prize with such illustrious competitors as Colin Maclaurin, and Daniel Bernoulli, than to have carried it away from rivals of inferior reputation. Rarely, if ever, did such a brilliant competition adorn the annals of the academy; and no subject, perhaps, proposed by that learned body, was ever treated with such accuracy of investigation and force of genius as that which here displayed the philosophical powers of these three extraordinary men.

In 1741 Euler received an invitation from the king of Prussia to visit Berlin; and being anxious to escape from the scene of those political intrigues which under a suspicious and tyrannical government then agitated Russia, he gladly accepted it. When he was introduced to the Queen Dowager she was so surprised at his taciturnity, that she required an explanation of it, and he told her that he had just come from a country where those who spoke were hanged. He contributed five memoirs to the "Berlin Miscellanies," and a large number on important subjects to the transactions of the Prussian Academy on the deepest parts of mathematical science, always containing new views, often sublime truths, and frequently important discoveries. At the same time he did not neglect to contribute largely to the memoirs of the Academy of Petersburg, which in 1742 granted him a pension. He also acceded to the request of the princess of Anhalt Dessau, to write for her own use a work on Natural Philosophy. On his return to Petersburg in 1766, he published his celebrated *Letters to a German Princess*, in which he discusses with clearness the most important principles of Mechanics, Optics, Sound, and Astronomy.

In the midst of all these absorbing pursuits, Euler did not neglect the ties of kindred, nor cease to be a dutiful son as well as an affectionate husband. On the death of his father he went to Frankfort, in 1750, and returned with his widowed mother to Berlin, where she lived until 1761, enjoying, with the feelings of a parent, the high distinctions which her son had attained by his genius and untiring activity. In 1760 a circumstance occurred which shows how greatly Euler was esteemed. The Russians having entered Brandenburg, proceeded to Charlottenburg, where they plundered a farm belonging to Euler. When General Tottleben was informed of the name of the owner, he ordered immediate reparation to be made to an amount far above the injury

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sustained, to which the Empress Elizabeth added the additional sum of 4000 florins.

In 1766 Euler accepted the invitation of the Empress to return to Petersburg; but he experienced no small difficulty in obtaining permission from the king of Prussia to quit his territory, so much was he esteemed by that sovereign, who, although he spoke of Euler as being "*only* a mathematician," yet had sufficient discrimination to perceive that he added lustre to a court which aspired to science and literature. On his return to Petersburg, Euler was afflicted with a severe illness which terminated in the total loss of his sight. A cataract formed in his left eye which he had injured by too severe mental application. In this distressing situation he dictated to his servant, a tailor's apprentice and quite ignorant of mathematics, his *Elements of Algebra*, a work as admirable for clearness and method, as for the distressing circumstances under which it was composed. The amanuensis is said to have acquired a good knowledge of Algebra, in the course of merely taking down what Euler spoke.

The Academy of Sciences of Paris elected Euler to the honourable post of foreign member of their body, and adjudged the prize to three of his memoirs, "Concerning the Inequalities in the Motions of the Planets." The two prize questions proposed by that academy for 1770 and 1772 were designed to obtain from astronomy a more complete theory of the moon. With the assistance of his son, Euler competed for these prizes, and obtained both. In his last memoir he reserved for further consideration several inequalities of the moon's motion, which he could not determine in his first theory, on account of the laborious calculations in which his method had involved him. But, with the assistance of his son and two other gentlemen, he carefully revised his theory, constructed tables, and published the whole in 1772.

All these means of investigation, employed with such art and dexterity as could only be expected from analytical genius of the first order, were attended with the greatest success; and it is impossible to observe without admiration such immense calculations on the one hand, and on the other the ingenious methods employed by this great man to abridge them, and to facilitate their application to the real motion of the moon. But this admiration will become astonishment when we consider at what period, and in what circumstances, all this was effected. It was when he was totally blind, and, consequently, obliged to arrange all his computations by the sole powers of his memory and his genius; when he was embarrassed in his domestic circumstances by a dreadful fire, which had consumed the greater part of his substance, and forced him to quit a ruined house, every corner of which was known to him by a habit that in some measure supplied the place of sight;—it was in these circumstances, and under these privations, that Euler composed a work, which alone is sufficient to render his name immortal. The heroic patience and tranquillity of mind which he displayed need no eulogy here: and he derived them not only from the love of science, but from the power of religion. His philosophy was too genuine and sublime to stop its analysis at mechanical causes; it led him to that divine philosophy of religion which ennobles human nature, and is alone capable of forming a habit of true magnanimity and patience under suffering*.

After this great work was completed, Euler was couched by the celebrated oculist Wenzell, and restored to sight; but the delight occasioned by this successful operation did not long continue. Partly by the neglect of his medical attendants, and partly by his own impatience to exercise his re-acquired powers he again became totally blind, and the relapse was accompanied by intense pain. This misfortune, however, did not check the ardour of his genius. He had engaged to supply the academy of Petersburgh with a sufficient number of memoirs to complete its Transactions for twenty years after his death, and, accordingly, with the assistance of his son and two other gentlemen, he sent to the academy seventy memoirs within the space of seven years, and left above two hundred more, which were revised and completed by the biographer of Euler, from whom we have just quoted.

If we consider the great extent to which Euler carried his researches in mathematics and astronomy, we shall be surprised to find that he was also skilled in the sciences of medicine, botany, and chemistry; that he was moreover a good classical scholar, and had read with attention and taste not only the principal Latin authors, but had made himself familiar with the civil and literary history of all ages and all nations. We learn also that intellectual foreigners, who had previously become acquainted with his mathematical and physical researches and discoveries, were astonished on visiting him to find that he also possessed an extensive acquaintance with the most interesting branches of literature. This wonderful memory doubtless made the acquisition of every kind of knowledge easy to him: as an example of the powers of his memory it is stated that he could repeat the Æneid of Virgil without hesitation from the beginning to the end, and even name the first and last line of every page of the edition which he used.

In September, 1783, he made some calculations on the motions of balloons, then newly invented. On the 7th day of that month he dined with Lexell and conversed on the subject of the newly discovered planet Herschell, and while his grandchild was at tea, he began to play with it, when he was struck with apoplexy, and died without pain.

Condorcet has left an eloquent and just summary of the character of Euler, which is thus quoted in the article before referred to:—

Euler was one of those men whose genius was equally capable of the greatest efforts, and of the most continued labour; who multiplied his productions beyond what might have been expected from human strength, and who, notwithstanding, was original in each; whose head was always occupied, and whose mind was always calm. The nature of his pursuits, by withdrawing him from the world, preserved that simplicity of manners for which he was originally indebted to his character and his education; and he employed none of those means to which men of real merit have sometimes recourse, in order to enhance the importance of their discoveries. It is true that fecundity such as his renders unnecessary all the little calculations of self-love; but still great lucidity of mind, and uprightness of character, are necessary to trace, as he has done, the history of his thoughts, even when his investigations have proved fruitless, or the results disappointed the expectations which he had formed. Euler's constitution was uncommonly vigorous; his health was good; and the evening of his long life was serene, being sweetened by the fame which follows genius, the public esteem and respect which are never withheld from exemplary virtue, and several domestic comforts, which he was capable of feeling, and therefore deserved to enjoy.

Pleasures are like poppies spread,
You seize the flower, its bloom is shed;
Or like the snow-falls in the river,
A moment white—then melts for ever;
Or like the borealis race,
That flit ere you can point their place;
Or like the rainbow's lovely form
Evanishing amid the storm—
Nae man can tether time or tide.

BURNS.

* *Encyclopædia Britannica.*

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THE

Saturday Magazine.

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OVERLAND JOURNEY FROM INDIA TO ENGLAND.

A RAJAH AND HIS VASSALS.

THIRD ROUTE.

BY WAY OF LAHORE, CAUBUL, BALKH, BOKHARA, TOORKMANIA, KHORASAN, AND PERSIA, TO THE BLACK SEA.

WE now invite the reader to accompany us in our third overland journey from India, during which we propose to traverse some of the countries of Central Asia, situated between Hindostan and the Caspian Sea. Our fellow travellers will be principally Sir Alexander Burnes, Mr. Elphinstone, and Colonel Conolly.

If we examine a map of Asia we find that the river Indus forms a general boundary between Hindostan and the countries westward of it. Beginning from the south, where that river discharges itself into the Indian Ocean, we find that both sides of the river are in the dominions of Sinde, which is bounded on the east by Rajpootana, or the country of the Rajpoots, and on the west by Beloochistan. But when we ascend higher up the river we find that it forms a general boundary between the Punjaub,—recently under the rule of Runjeet Singh,—and Caubul or Afghanistan.

Now, every British officer who crosses the Indus in his way overland to England, must pass through territories not belonging to the British crown before he reaches the Indus. In discussing the political relations of Asia it would undoubtedly appear advantageous to England, if the banks of the Indus were in her possession; but this is a matter with which we have nothing here to do, and shall therefore merely state the fact. After crossing the Indus, some travellers proceed directly through Caubul and Khorasan, to the Caspian Sea; but we shall find more objects of interest by taking a more northerly route through the north-east part of Caubul, and thence through Balkh to Bokhara; from whence we shall proceed by Mushed and Astrabad, to the Caspian.

On leaving Delhi, the former capital of Hindostan, but now under British dominion, our route takes us north-west towards the river Sutledje, the eastern boundary of the Punjaub. This name, "Punjaub," is singularly expressive of the nature of the country to which it is applied. It means, in Oriental language, "five rivers," and designates a triangular district watered by five rivers, which ultimately combine and form the Indus. Alexander the Great traversed this country in his career of conquest, and his historians speak of it in these terms:—"The greater part of this country is level and champaign, which is occasioned chiefly, as some suppose, by the rivers washing down quantities of mud during their overflowings, insomuch that many countries have borrowed their very names from the rivers which pass through them." This country is inhabited chiefly by Seiks or Singhs, the descendants of a sect of priests established in the fifteenth century. These Seiks were energetic men; and Mr. Forster, writing in 1783, said: "Should any future cause call forth the combined efforts of the Seiks, to maintain the existence of empire and religion, we may see some ambitious chief, led on by his genius and success, absorbing the power of his associates, display from the ruins of their commonwealth the standard of monarchy." This sagacious remark has been amply justified in the subsequent career of Runjeet Singh, who was born about the time that Forster made this prediction. The powerful kingdom or

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chiefdom raised by this extraordinary man, as well as the personal qualities of the ruler, have already occupied our attention in a former volume*.

Through this country, then, we proceed. On crossing the river Sutledge, the mighty Himalaya mountains are dimly visible, at a distance of one hundred and fifty miles, clothed in snow almost from base to summit, and forming a striking contrast with the pleasing verdure of the plains of the Punjaub. Near the banks of the river are numerous villages, the houses of which are terrace-roofed, and formed of sun-dried brick on a wooden frame-work. The inhabitants are chiefly Hindoos, but among them are a small number of Mohammedans. In the upper parts of the river the inhabitants are exclusively agricultural; but lower down their habits are more predatory. When Sir Alexander Burnes entered the first Punjaub village, he was met by a crowd of females and children who approached to welcome him, and who had perhaps never before seen an European. The boys of the village also assembled to gratify their curiosity: while the party was approaching they were silent and looked with attention; but when it had passed, all was bustle and uproar, running and falling, jumping and laughing, till the head man and his troopers called the urchins to order. The first town beyond this village is Puttee, containing about 5000 inhabitants. The houses are constructed of brick, as are also the pavements of the streets.

On the eastern bank of the river Ravee, some distance west of the Sutledge, stands Lahore, the capital of the Punjaub. Lahore is distinguished into the old and new cities, of which the former extended from east to west for a distance of five miles, and had an average breadth of three. The mosques and tombs, which were more substantially built than the houses, remain in the midst of the cultivated fields, as caravanserais for travellers. The modern city occupies the western angle of the ancient capital, and is encircled by a strong wall. The houses are very lofty, and the streets, which are narrow, are rendered dirty and unpleasant by open gutters which run along them. The king's mosque is a capacious building of red sandstone, which had been brought by Aurungzebe from near Delhi. Its four lofty minarets are still standing; but the temple itself has been converted into a powder magazine. On the opposite side of the river Ravee is the Shah Dura, or tomb of the emperor Juhangeer, a monument of great beauty. It is a quadrangular building, with a minaret at each corner rising to the height of seventy feet; it is built chiefly of marble and red stone, which are alternately interlaced in all parts of the building. The sepulchre is of chaste workmanship, with its inscriptions and ornaments arranged in beautiful mosaic. The garden, which once belonged to the same emperor, is a magnificent remnant of Mogul grandeur. It is about half a mile in length, with three successive terraces, one above the level of the other; a canal, which is brought from a great distance, intersects this beautiful garden, and throws up its water in nearly five hundred fountains, to cool the atmosphere.

Referring to the articles before alluded to, for further information respecting the dominions of Runjeet Singh, and the character of the inhabitants, we will proceed in our journey, in a north-western direction from Lahore. Sir A. Burnes was treated with the greatest kindness and hospitality by General Allard, and with magnificent familiarity by Runjeet, who detained the party for a few weeks, which were devoted to sport and merriment. He then proceeded on his journey, and fell in with an Eastern philosopher, who harangued the travellers in the following terms: "The world possesses three different atoms, all excellent, and all of which enter into the noblest work of God, —man. Neither the gem nor the precious metals can multiply or increase their size or number; in their beauty we find their excellence. In the vegetable kingdom, we see the trees and plants sucking moisture from the earth, and moulding it to their nature, increase in size and glory. In the animal kingdom we see the beasts of the field cropping those plants which afford them nourishment, and avoiding those which are noxious. In man alone have we every excellence; he possesses the beauty and ornament of the gem; understands and wields the properties of the vegetable kingdom; and, to the instinct of the animal creation, he adds reason and looks to futurity."—This philosophical disquisition was of a character to gain the Eastern sage a very high place in the estimation of his countrymen.

The traveller whom we have had occasion to name, and a few companions, travelled in 1832, through the Punjaub and Caubul to Bokhara; and it may be interesting to state the provisions they made to avoid danger in passing through these half-civilised countries. They decided that the best chance of safety was an appearance of poverty. They put away all their European clothing, and adopted the costume of Asiatics: a flowing Afghan robe, sash, sword, shaved head, ponderous turban, and slippers. They gave away tents, beds, and boxes; knowing that a hut, at best, would generally be their bed-room, and a coarse carpet or mat the bed. A blanket served to cover the saddle by day, and to sleep under by night: and a saddle-bag, thrown across a horse, was the depository of the wardrobe. All the little comforts to which Europeans are accustomed, were dispensed with, and it was remarked,—"It is, nevertheless, a curious feeling to be sitting cross-legged, and to pen a journal on one's knees. Custom soon habituated us to these changes; and we did not do the less justice to our meals, because we discarded wine and spirits in every shape, and ate with our fingers from copper dishes without knives and forks."

The five rivers which give the name to the Punjaub are successively crossed, in proceeding towards Caubul; and on the banks of the one of them, the Jelum,—called, when Alexander the Great crossed it, the Hydaspes,—is a very remarkable salt mine. It is situated near the outside of a range of hills, in a valley cut by a rivulet of salt water. The entrance to the mine is at the side of a hill, about two hundred feet above its base. After proceeding in an inclined direction three or four hundred yards into the body of the hill, we arrive at a cavern of irregular dimensions, excavated entirely in salt. The mineral is deposited in strata of the utmost regularity, occurring in vertical layers. None of the layers exceed a foot and a half in thickness, and each is distinctly separated from its neighbour by a deposit of argillaceous earth about an eighth of an inch thick, which lies like mortar between the strata. Some of the salt occurs in hexagonal crystals, but oftener in masses; the whole of it is tinged with red, varying from the slightest shade to the deepest hue. When our travellers visited this mine, there were about a hundred persons, men, women and children, at work there; and their small dim lamps were reflected with a glittering lustre from the sides. The salt is hard and brittle, so as to splinter when struck with the sledge-hammer and pickaxe. The rock is never blasted with gunpowder, from fear of the roof falling in, and accidents of this kind sometimes happen even in the present simple mode of excavation. The miners live in villages among the hills; and receive a rupee for every twenty maunds of salt brought to the surface, a task which may be performed by a man, his wife and child, in two days. In those parts of the mine where the mineral is near the surface, it is hewn into blocks of four maunds, two of which load a camel; but it is usually broken in small pieces. This salt holds a high reputation throughout India with native practitioners, from its medical virtues. It is not pure, having a considerable mixture of some substance (probably magnesia) which renders it unfit for curing meat.

The country near which we have now arrived is the immediate scene of the conflicts between Alexander and Porus. Our traveller remarks:—"In our search for the remnants of Alexander's cities, we are led into reflections on the state of the country in those days; and it is curious to compare them with our own times. We are informed that Porus, with whom Alexander fought on the banks of this river (the Hydaspes), maintained a force of 30,000 infantry, and 4000 cavalry, with 200 elephants, and 300 war chariots, and that he had subdued all his neighbours. Now, if we change the war chariots into guns, we have precisely the regular force of Runjeet Singh, *the modern Porus*, who has likewise overwhelmed all his neighbours. The same country will generally produce the same number of troops, if its population be not reduced by adventitious circumstances."

We now enter the country of Potewar, inhabited by a tribe of people called Gukers, famed for their beauty, and claiming a Rajpoot origin. "The credulity of these people is as great as in other parts of India. A grave and respectable man assured me, (says our traveller,) that he had seen a lake, called Ruwaesir, in the hill district of Mundee, on the Sutlege, which had three small islets floating upon it. These are a place of Hindoo pilgrimage; and my informant assured me that they approach to receive the votaries who embark upon them, and are floated out with their offerings. It is obvious that there must be some delusion or deception, which is practised with no small dexterity, as the place retains its character. A native told me that he had heard it

* *Saturday Magazine*, Vol. XII., pp. 239, 247.

was an artificial heap of soil placed over reeds; but he had not visited the spot, and seemed to proffer his information from hearing my doubts as strongly expressed as I felt them. In the valley of Cashmeer there are moveable beds of melons, which, in some degree may be considered in the light of islands. The ingenious people of that valley spread a thick mat on the surface of their lake, and sprinkle it over with soil: it soon acquires a consistency from the grass growing upon it. On the following year they sow melons and cucumbers, and reap the harvest from a boat; and thus turn to account the very surface of the lake in their rich country. The melon islands of Cashmeer may have supplied a hint to the Hindoo priests of Mundee."

Proceeding onwards, through a country replete with associations of other times, we come to the fortress of Rotas: "As we wound through the dismal defiles, and might be ruminating on the various expeditions which had traversed this very road, the fort burst upon our view like the scene of a magic lantern. It had been hidden from us by towering precipices. We approached its ponderous walls by a straggling path which time had chiselled in the rock, and soon reached its lofty gateway. The black, hoary aspect of the fort, and the arid sterility of the surrounding rocks, inspired us with no favourable idea of the neighbourhood, which has been the resort of many a desperate band." From Rotas we enter into a mountainous and rugged country, of great strength, and the road is among ravines. The chaos of rocks, their vertical strata, terminating in needles from decomposition, the round pebbles that lay imbedded in the sandstone, and the wild scenery, make this an interesting neighbourhood.

We pass through the village of Manikyala, which stands on a spacious plain with a remarkable funeral monument, called a "tope," distinguished at a distance of sixteen miles, and arrive at the town of Rawil Pindee: this is pleasantly situated within twelve miles of the snow-covered mountains. "We were now fast leaving Hindostan, and its customs, behind us. The dandelion had become a common weed. At Manikyala, we halted next door to a bakery, where the whole bread of the village is cooked, and we were glad to be considered customers of the village oven."

About fifteen miles from Rawil Pindee we pass the defile of Margulla, and gain a view of the mountains beyond the Indus. This is a narrow pass over the low hills, and is paved with blocks of stone for 150 yards. A Persian inscription let into the rock, commemorates the fame of the civilized emperor who cut the road. The defiles continue for about a mile, when a bridge across a rivulet conducts the traveller to the next capavanserai. "We continue our march about twenty miles, and arrive at Osman, which stands on a plain at the mouth of a valley close to the base of the outlying hills. Its meadows are watered by beautiful crystal rivulets, flowing from the mountains. Some of them are conducted by artificial means through the village, and turn little water-mills that grind flour. Up the valley stands the fort of Khanpoor, with some beautiful gardens; and over it snow-clad mountains rear their peaks. The fields of this fruitful valley lie neglected, from the exorbitant assessment of the person who farms it. The peasants have no hope of redress but by such an expedient; and this entire suspension of the labours of the husbandmen may open the understanding of the misguided governor."

We now approach towards the fortress of Attock: a place deriving its importance from several circumstances; it is on the banks of the Indus, forming the north-western extremity of Hindostan; it is on the great road from India to Tartary; and it is situated at the boundary between the Punjaub and Afghanistan. The Indus is here divided into three branches; and our travellers determined to ford across it on the back of an elephant, which had been placed at their disposal for this purpose by Runjeet Singh's officers. "We mounted one of the chief's elephants, and, accompanied by himself and 200 horsemen, passed a few miles down the river to the village of Kyrakhuel. I did not like the appearance of the torrent; and though I said nothing, would have willingly turned back; but how could that be, when I had been the foremost to propose it? The chief rallied his escort round him, threw a piece of silver money into the river according to custom, and dashed into it. We followed, and the whole of our party reached in safety." Some stragglers who attempted to follow them met with a melancholy fate. Instead of crossing at the exact point where the others had effected the passage, they passed a few yards lower down, with the water but knee-deep; yet very rapid. The whole seven were unhorsed in a moment, and swept into the stream. The ferryman ran to their assistance, and extricated them all but one man and two horses.

We have now arrived in the country of Caubul, inhabited for the most part by Afghans; but the region a short distance on either side of the Indus is governed by the Punjaub ruler. Runjeet Singh had a curious method of crossing the Indus at Attock with his army. He kept there a fleet of thirty-seven boats; which, when required to be used, were anchored in the stream, at a short distance from one another. A communication was then made from one to another by means of planks. Skeleton frame-works of wood, filled with stones, to the weight of 25,000 lbs., and bound strongly by ropes, were let down from each boat, to the number of four or six: these served as anchors, to prevent the boats from being carried down by the rapidity of the stream. It is not a little remarkable, as indicating the similarity of Oriental customs in different ages, that Alexander the Great, more than two thousand years ago, crossed the Indus at this very place in a manner almost exactly resembling that here described.

We are now quitting the territories of Hindostan, and entering on a land where covetousness of a neighbour's goods is the ruling passion. Our travellers therefore marched with their baggage, and divided their few servants into regular watches for the night. "We were now living as natives, and had ceased to repine at the hardness of the ground and the miserable hovels in which we sometimes halted. I had also disposed of my own valuables in what then appeared to me a masterly manner: a letter of credit for five thousand rupees was fastened to my left arm, in the way that the Asiatics wear amulets. My polyglot passport was fixed to my right arm, and a bag of ducats was tied round my waist. I also distributed a part of my ready money to each of the servants, and so perfect was the check that had been established over them, that we never lost a single ducat in all our journey, and found most faithful servants in men who might have ruined and betrayed us. We trusted them, and they rewarded our confidence. One man, Ghoolam Hoosun, a native of Surat, followed me throughout the whole journey, cooked our food, and never uttered a complaint at the performance of such duties, foreign as they were to his engagements." This man remained in England with Sir A. Burnes.

Afghanistan, on the western side of the Indus, is a large country inhabited by a vigorous and warlike race, but distracted and torn by internal dissensions. At the time when Mr. Elphinstone visited this country, in 1809, it was wholly under the rule of a powerful monarch, Ahmed Shah Doora nee. But since that time, through the contests of rival claimants to the throne, the monarchy has been utterly dismembered: one chieftain seized on this province; another on that; the ruler of the Punjaub on a third, and so on, till it is now scarcely possible to say whether there is an Afghan kingdom or not. When Sir Alexander Burnes visited the country in 1832, the more valuable part of the country were in possession of four chieftains, who assumed sovereign authority over the territories which they seized, and who made their respective capitals at the cities of Peshawar, Caubul, Candahar, and Herat. At a still later period, the British government in India found it necessary to interfere in the political relations of this country; and the events of the year 1839, which shed such lustre on the British arms, had immediate reference to the contests between rival claimants for the Afghan throne. The reader will therefore see reason why we should pass over briefly the general character of the Afghan nation. Our route takes us only across the north-eastern part of the country, and we shall soon get into other dominions.

The first town of importance, after crossing the Indus at Attock, is Peshawar. At this place, Sir A. Burnes was received with much attention by the chief, who sent out his son, on an elephant, to welcome the English travellers; and afterwards invited them to a feast. "I need not state," says our traveller, "that we ate with our hands; but we soon ceased to wonder at a nobleman tearing a lamb in pieces and selecting the choice bits, which he held out for our acceptance. A long roll of leavened bread was spread in front of each of us as a plate; and, since its size diminished as the meat disappeared, it did its part well. Pilaos and stews, sweets and sours, filled the trays; but the *bonne bouche* of the day was a lamb, that had never tasted aught but milk. A bitter orange had been squeezed over it, and made it very savoury. Four trays of sweetmeats followed with fruit; and the repast concluded with sherbet, mixed with snow, the sight of which delighted us as much as our

new friends." On the day following this repast, many of the most distinguished persons in Peshawar paid visits to the travellers, who found them rather intelligent persons, and of very buoyant spirits. During conversation, many of them rose up and prayed in the room, when the stated hours for Mohammedan worship arrived. The chief, or shah, would sometimes, during the month in which the travellers sojourned there, pay them an unexpected visit, and throwing off the restraints of state, enter into familiar conversation.

On the departure of the travellers, the shah adopted a line of conduct which places the Afghans in a favourable light as to generosity and courtesy. He sent a Persian gentleman to accompany them to Caubul; and gave them, in addition to letters of recommendation to distinguished persons on the route, six blank sheets of paper bearing his seal, which he begged them to fill up with the names of any persons whom they believed could assist them. In return for these favours he could scarcely be prevailed upon to accept the smallest present from the travellers.

In proceeding through the plains from Peshawar to Caubul, we pass through a plain where the pestilential wind called "simoom" is frequently experienced. The natives of this country say that the simoom is generally fatal. Travellers, who have recovered, remark that it attacks them like a cold wind, which makes them senseless. Water, poured with great violence into the mouth, sometimes recovers the patient; and a fire kindled near him, has a good effect. Sugar and the dried plums of Bokhara are also given with advantage. Horses and animals are subject to the effects of the simoom as well as man; and the flesh of those who fall victims to it is said to become so soft and putrid, that the limbs separate from each other, and the hair may be pulled out with the least force. It is as malignant in its effects during night as in the day; and in summer no one ever thinks of travelling while the sun is above the horizon. In a party of thirty or forty individuals, one only may be attacked, nor are those who escape sensible of any change in the atmosphere.

After passing through a country varied by alternate hills and plains, we arrive at Caubul, the nominal capital of the whole country, though of late years shorn of some of its importance by the establishment of independent governments at Peshawar, Candahar, and Herat. Caubul is a busy and populous city. There is a hill near the Emperor Babor's tomb, from the summit of which a very extensive view of the city and its environs can be obtained. A plain, about twenty miles in circumference, laid out with gardens and fields in pleasing irregularity, intersected by three or four rivulets, which wind through it by a serpentine course, and wash innumerable little forts and villages, presents itself before the view. The great bazaar of the city is an elegant arcade, six hundred feet long, and divided into four equal parts. Its roof is painted, and over the shops are the houses of some of the citizens. In the evening it is said to present a very interesting appearance: each shop is lighted up by a lamp suspended in front, which gives the city an appearance of being illuminated. The number of shops for the sale of dried fruits is remarkable, and their arrangement tasteful. At some of the shops may be purchased pears, grapes, apples, melons, quinces, and other fruits: at others, snipes, partridges, ducks, plovers, and game; in a third range, books, and Russian paper; and many others. In the month of May, a favourite white jelly, called *falodeh*, is sold in great abundance at the bazaar: it is strained from wheat, and drunk with sherbet and snow: a pillar of snow stands on one side of the sellers, and a fountain plays near it, which gives these places a cool and clean appearance. In the most crowded parts of the city there are generally story-tellers amusing the idlers, or dervishes proclaiming the glories and deeds of the prophet. There are no wheeled carriages in Caubul; but as the streets are kept in a clean state in dry weather, and are intersected by small covered aqueducts of clean water, the city is much more cleanly in its appearance than the generality of Oriental towns. Most of the houses are built of sun-dried bricks and wood, and few of them are more than two stories in height. Caubul is particularly celebrated for its fruit, which is exported in great abundance to India. Its vines are so plentiful that the grapes are given, for three months of the year, to cattle. There are ten different kinds of grapes grown there; and the people apply them to many uses, besides making wine of the juice. They use its juice in roasting meat; and during meals, use grape-powder as a pickle: procured by drying the grapes before they get quite ripe, and grinding them: this powder has the appearance of Cayenne pepper, and has a pleasant acid taste.

From Caubul our route takes us in a north-westerly direction, over the mountains of Hindoo Coosh to the city of Balkh, between two and three hundred miles from Caubul. These mountains are very lofty, and being covered deeply in snow through many months of the year, afford a formidable barrier to the passage of the traveller northward. On the road, we come to Bameean, once a celebrated city, but now celebrated only for the colossal idols which are presented to view. A hill in the middle of the valley of Bameean is quite honeycombed by excavated caves, which ramify in every direction. The hills on both sides of the valley are formed of indurated clay and pebbles, which render their excavation a matter of little difficulty; but the great extent to which it has been carried, excites surprise. The excavated caves have no pretensions to architectural ornament, being nothing more than holes dug in the hills. But the gigantic idols are, indeed, astonishing monuments of ancient times. They consist of two figures, a male and a female, cut in alto relievo on the face of a hill; the larger of the two being a hundred and twenty feet high. The male figure is mutilated; both legs having been fractured by cannon, and the countenance above the mouth is destroyed. The lips are very large; the ears long and pendant; and there appears to have been a tiara on the head. The figure is covered by a mantle, which hangs over it in all parts, and has been formed of a kind of plaster. The figure is without symmetry, nor is there much elegance in the drapery. The hands, which held out the mantle, have both been broken. The female figure is much smaller than the other, but similar to it in most respects. At the lower part of each figure are openings which lead to different caves or excavations in the hill; and through these there is an ascending road, which leads to the upper parts of the figures*.

In travelling across the Hindoo Coosh range, Sir A. Burnes and his companions were frequently in danger of being robbed and seized by the rude inhabitants, who,—half Afghans, half Tartars,—owned no legitimate ruler, and lived in a predatory manner. Yet the buoyancy of an enterprising spirit enabled that officer to overcome all difficulties. He says: "The life we now passed was far more agreeable than a detail of its circumstances would lead one to believe, with our dangers and fatigues. We mounted at daylight, and generally travelled without intermission till two or three in the afternoon. Our day's progress averaged about twenty miles; but the people have no standard of measure: and miles, coses, and fursukhs, were equally unknown, for they always reckon by the day's journey. We often breakfasted on the saddle, on dry bread and cheese; slept always on the ground, and in the open air; and after the night's march, sat down cross-legged, till night and sleep overtook us. Our own party was everything that could be wished, for the Nazir and his amusing fellow-traveller were very obliging. We were quite happy in such scenes, and at the novelty of everything; and it was also delightful to recognise some old friends among the weeds and shrubs. The hawthorn and sweet briar grew on the verge of the river; and the rank hemlock, that sprang up under their shade, now appeared beautiful, from the associations which it awakened. Our society, too, was amusing; and I took every favourable occasion of mingling with the travellers whom we met by the way, and at the halting-places."

Journeying on in this way, we suppose our fellow-travellers to have arrived at Balkh. This city, which gives its name also to a surrounding district, is of the highest antiquity. It was known to the Greeks in the time of Alexander by the name of Bactra; but it had been the capital of Persia at a far earlier period, having been fixed on as the royal residence by Khosroo, supposed to be the same as Cyrus the Great. All the Asiatics are impressed with the idea of its being the oldest city in the world, and, in consequence, distinguish it by the title of Omool Belaud, the "Mother of cities." This ancient metropolis is now reduced to insignificance. Its ruins still cover a great extent, and are surrounded by a wall; but only one corner is inhabited.

Balkh is one of those cities which have become a sort of football among conquerors; now belonging to this nation, now to that. A century or two ago, it was under Persian dominion; then under that of the Afghans; afterwards under the chief of Khoondoog; and at the time when Sir A. Burnes wrote, it was included in the kingdom of Bokhara. The ruins of the city occupy an area of ground twenty

* A drawing of this colossal idol is given in *Saturday Magazine* Vol. IX., p. 225.

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AFGHAN NATIONAL DANCE.

miles in circumference, and consist of fallen mosques and decayed tombs, built of sun-dried bricks. In its wide area the city appears to have inclosed innumerable gardens, which increased its size without adding to its population. It contains the remains of three large colleges, now in a state of decay, with desolate cells or rooms. A mud wall surrounds a portion of the town; but it must be of late age, since it excludes the ruins on every side for about two miles. The city, like Babylon, has become a perfect mine of bricks for the surrounding country; these are of an oblong shape. Most of the old gardens are now neglected and overgrown with weeds; the aqueducts are dried up; and the greater part of the city looks more like a monument of departed greatness, than an important Oriental town. The modern population and buildings of Balkh are not sufficiently of importance to need any descriptive details here; we will therefore proceed onwards.

Balkh is situated at some miles' distance from the Oxus, a river noted in the campaigns of Alexander, and moreover of commercial importance in our own day, as leading to Lake Aral, a little eastward of the Caspian Sea. Along the road leading from Balkh to the river our travellers proceeded in the following manner.—The horses were exchanged for camels, over each of which two panniers, called "kujawas," were thrown. One person got into one pannier, and one in the other, by which a balance was maintained,—a mode which was at first very incommodious to the travellers, for the panniers were but four feet long, and two and a half wide, so that it required some suppleness and ingenuity to place the body in a comfortable posture. At times they pitched their camp for the night on the ground, in the immediate vicinity of the Toorkman tents. "We had now no tents, nor shelter of any kind, but a coarse single blanket, which we used to stretch across two sets of panniers. Even this flimsy covering sheltered us from the sun's rays, and at night we had it removed, and slept in the open air. Our food now consisted of bread and tea, for the Toorkmans often object to dispose of their sheep, since it injures their estate; and we could only look on their countless flocks with a desire to possess a single lamb, which often could not be gratified. Europeans, who are so much accustomed to animal food, are sensible of the change to a diet of bread, but we found it tolerably nutritive, and had much refreshment from the tea, which we drank with it at all hours. I found that abstinence from wine and spirits proved rather salutary than otherwise; and I doubt if we could have undergone the vicissitudes of climate had we used such stimulants."

The river Oxus, at the part where it is approached from Balkh, is broad and noble, and is crossed in a curious manner. The travellers get into a boat, to which are yoked two horses by the hair of the mane. The bridle is then put on as if the horses were to be mounted; the boat is pushed into the river; and, without any other assistance than the horses, is ferried directly across the river. A man in the boat holds the reins of each horse, and allows them to play loosely in the mouth, urging the animal to swim, and, thus guided, he advances without difficulty. There is not an oar to aid in impelling the boat, and the only assistance from those on board consists in manœuvring a rough pole at the stern, to prevent the vessel from wheeling in the current, and to give both horses clear water to swim. They sometimes use four horses, in which case two are fixed to the stern of the boat. These horses require no preparatory training, since the natives yoke indiscriminately all that cross the river. By this ingenious mode a rapid river, nearly half a mile in width, is crossed in fifteen minutes.

On reaching the northern bank of the Oxus, we find ourselves in Toorkistan, the native country of the Uzbek Tartars, and the region from whence Genghis Khan and Tamerlane poured down their armies of rude barbarians on Southern Asia. The route to Bokhara, about half way between Balkh and the Aral Sea, lies not far from the northern bank of the Oxus, and along this route we proceed. The mode of travelling in this region, for persons going to Bokhara, is to start about six in the evening, and go over a stage of about twenty-five miles, by seven or eight in the morning, the camels moving at a steady pace, at the rate of about two miles an hour. At the rising and setting of the sun, the merchants who travel this route, and who, whether they belong to Bokhara, Persia, Balkh, or Afghanistan, are generally Mohammedans, halt to repeat their prayers. At other times also they halt to give drink to the camels.

Notwithstanding that the Oxus is so noble a river, the country on either side of it is little better than a desert, for a distance of a hundred miles, and over this desert not a town or a tree is to be seen. On the route from Balkh to Bokhara the first considerable town met with is Kurshee. It is a straggling place, a mile in length, with a considerable bazaar, and about ten thousand inhabitants, who live in flat-roofed, mean-looking-houses. A mud fort, surrounded by a wet ditch, forms a respectable defence on the south-west

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side of the town. A river, which rises from Shuhur Subz, about fifty miles distant, and famous as the birth-place of Timour the Tartar, passes north of Kurshee, and enables its inhabitants to form numerous gardens, shaded by lofty trees.

The city of Bokhara, to which we at length arrive, is one of the most important cities of Asia, being situated in a central spot, having Russia on the north, the Caspian on the west, Persia and Caubul on the south, and the Chinese Empire on the east; thus forming a medium of communication for merchants trading from one country to the others. The city is of a triangular shape, and enclosed by an earthen wall, in which are eleven gates built of brick, with a round tower on either side. The widest street in the city measures but seven feet in width, and the narrowest only three or four. The houses are built of sun-dried bricks, on a framework of wood, and are all flat-roofed. They are arranged in the Oriental manner, presenting towards the street a mere wall, without windows, with a gate in the middle, leading to a court-yard, round which the rooms are placed, which, generally receive light through the doors. The town is intersected by canals, which receive water from a neighbouring river, the water being afterwards distributed to about seventy wells or cisterns, each a hundred and twenty feet in circumference. The Royal Palace stands on a conical hill, and is inclosed by a wall sixty feet high, which has but one gate, opening into a large corridor. This corridor, built over vaults, leads to the flat top of the hill, where the buildings stand in which the king and his court are lodged. These edifices consist of a mosque, the dwellings of the king and his children, the harem,—surrounded by a garden and concealed by trees,—and the vizier's house. Bokhara contains three hundred and fifty mosques, the principal of which stands opposite the royal palace, occupying a square of three hundred feet, with a dome a hundred feet high. The bricks forming the front are of different colours, and are so disposed as to form different designs of flowers tied together. Attached to this mosque is the minaret of Mirgharab, nearly two hundred feet in height, with a base seventy feet in circumference.

The city contains a great number of colleges, amounting to about sixty, of which one third contain upwards of seventy students each. These edifices are generally in the form of a parallelogram, two stories high, and inclose a spacious court-yard. In each story are two rows of chambers, one having its windows towards the court-yard, and the other towards the street. These chambers are sold to the students, who in this manner acquire a claim to a certain yearly maintenance from the college. The colleges have considerable revenues, the whole of the bazaars and baths of the city having been erected by pious persons, and left for the maintenance of the colleges and mosques. The number of the baths here alluded to is eighteen, some of which are of large dimensions, and consist of several vaulted chambers, built round a large basin filled with warm water.

There are fourteen caravanserais in Bokhara, all built on a similar plan, each consisting of a range of square buildings of two stories, inclosing a court yard, and having rooms round the court yard used as warehouses, and let to merchants. The bazaars are numerous and extensive, some of them being upwards of a quarter of a mile in length. In the shops with which they are lined on both sides, every sort of merchandize is exposed for sale, with the exception of woven goods, which are sold in large edifices built for that purpose; several of these edifices, each consisting of some hundreds of small shops, contain only the silk goods, which are manufactured in the town; while others contain the cottons, linens, and brocades of England, Russia, Persia, and India. The number of shops in the great square of the city is very considerable. Tents of different colours are filled with the more common manufactures of the country, but the greater part of this open square is a market, in which the fruits of the country, consisting of grapes, melons, apricots, apples, peaches, pears, and plums, are sold, as well as the more important necessaries of life. This great square is a place of great bustle and animation, where a stranger may meet with Persians, Jews, Turks, Russians, Chinese, Toorkmans, Mongols, Cossacks, Hindoos, Afghans, and Uzbecks. These are principally merchants carrying on the extensive trade of which Bokhara is the centre; importing tea, porcelain, silk goods, raw silk, rhubarb, and silver, from the Chinese dominions; cochineal, spices, sugar, tin, sandal-wood, woollen-cloth, leather, wax, iron, copper, steel, small looking-glasses, otter-skins, pearls, cast-iron utensils, needles, coral, cotton-velvet, and numerous other articles, by way of Russia; shawls, girdles, carpets, and turquoise stones, from Persia; and shawls, brocade, muslins, pearls, precious stones, indigo, and other articles, from India.

Sir Alexander Burnes resided some time at Bokhara, and appears to have been much struck with the bustling appearance of the city. He says: "In every part of the open square there are people making tea, which is done in large European urns, instead of teapots, and kept hot by a metal tube. The love of the Bokharees for tea is, I believe, without parallel, for they drink it at all times and places, and in half a dozen ways: with and without sugar, with and without milk, with fat, with salt, &c. Next to the vendors of this hot beverage one may purchase 'ratrut-i-jau,' or the 'delight of life,'—grape jelly or syrup, mixed up with chopped ice. This abundance of ice is one of the greatest luxuries in Bokhara, and it may be had till the cold weather makes it unnecessary. It is pitted in winter, and sold at a price within the reach of the poorest people. No one ever thinks of drinking water in Bokhara, without iceing it, and a beggar may be seen purchasing it as he proclaims his poverty and entreats the bounty of the passenger. It is a refreshing sight to see the huge masses of it, with the thermometer at 90°, coloured, scraped, and piled into heaps like snow."

The king of Bokhara is a more enlightened man than the generality of Asiatic monarchs; yet he is not free from that painful distrust which arises from fear of poisoning or assassination. The water which he drinks is brought in skins from the river, under the charge and seal of two officers; it is opened by the vizier, first tasted by his people and then by himself, when it is once more sealed and despatched to the king. The daily meals of his majesty undergo a like scrutiny; the minister eats, then gives to those around him who wait for an hour to judge of the effect of the food; after which the viands are locked up in a box and forwarded to the king. His majesty has one key of the box, and the vizier another.

We now leave the city of Bokhara, and proceed towards Mushed, on the frontiers of Persia. From the city to the Oxus is a sandy desert, which can only be crossed by caravans, supplied with the means of support and of defence against marauders. A great part of the distance is occupied by vast fields of soft sand, formed into ridges which bear some resemblance to those on many sea shores. The belt of these sand ridges, lying between Bokhara and the Oxus, is about twelve or fifteen miles in width; they are utterly destitute of vegetation, and present a remarkable uniformity of shape, generally that of a horse shoe. On the southern side of the Oxus, likewise, a similar character pervades the country. Here few towns, and those far between, are met with; and the traveller has but a weary time of it. While Sir A. Burnes and his companions were travelling across this sandy tract they met seven Persians, who had been captured by the Toorkmans, and who were then on the road to Bokhara to be sold as slaves. Five of them were chained together, and trod their way through the deep sand. There was a general expression of compassion among the travellers in the caravan; and the sympathy did not fail to affect the poor creatures themselves. They cried, and gave a longing look, as the last camel of the caravan passed onwards toward Persia, their native country. They had been seized by the Toorkmans near Mushed, a few weeks before, when the culture of their fields had led them beyond the threshold of their homes.

The arrangement of the numerous persons and camels forming a caravan through the Toorkman desert gives occasion for the display of much kindly feeling, which is almost universally shown. If a single camel throws its load, all the caravan waits till it is replaced. It has been observed, "A caravan is an interesting scene at all times; and the shifts of the pious to prevent its detention in the Toorkman desert are not unworthy of notice. The line is generally too extensive to sound a halt for prayers, but at the appointed time, each individual is to be seen on the back of his camel, or in his pannier, performing his orisons, in the best manner which he could accomplish them."

After passing through these sandy deserts, we come to the town of Merve, and next to Shurukhs. These towns being situated on the frontiers of the Persian empire, have often suffered from the incursions of the ruthless Toorkmans in the north, and the inhabitants seized and sold as slaves. The Toorkmans are divided into several tribes, but they all pursue nearly the same course of life. In small parties or gangs, they approach Persia by short and easy stages, and after reaching the frontiers, they will hover for days in

sight of a fort, watching for a favourable opportunity of capture. If none present itself, they make a dash upon the fields in the morning, while the shepherds and husbandmen are pursuing their occupations, and bear off with speed whoever they may be able to seize. If hotly pursued, they relinquish a spare horse with which every two individuals are provided, and gallop off to a place of safety. In such expeditions, the fleetness of his horse is the chief guarantee which the Toorkman has for his success, and he accordingly bestows the utmost attention on his beast. The Toorkmans are accustomed to subject the horses to severe exercise after a long abstinence from food and water, which brings the animals to a state of great hardihood. They are coarse-looking animals, with none of the sleekness seen in European horses; but the manner in which they are trained enables them to bear great fatigue. On one occasion, the inhabitants of the town of Merve were attacked, and Bairam Khan, with 700 followers, were captured by a large troop and carried to Bokhara; upon which the wives and daughters of the prisoners embodied and appeared in the field as soldiers, performing such feats as have caused their names to be handed down in songs and legends.

Shurukhs is a Toorkman settlement, consisting of a small and weak fort, situated on a hillock, under cover of which most of the inhabitants have pitched their tents. There are a few mud houses, which have been built by the Jews of Mushed, who trade with this people. But the Toorkmans themselves live in the conical houses peculiar to their tribe: they are constructed of wood, surrounded by a mat of reeds, and roofed with felts, blackened with soot. Two thousand families are here domiciled, and about an equal number of horses. If their town be attacked by a force, either from Persia on the south, or from Khiva on the north, which they are unable to resist, they flee to the desert, and remain there till the storm is over. Sir A. Burnes heard of an incident at Shurukhs, which illustrates the dreadful state of enmity between the people on either side of this frontier. A Persian youth, who had been captured by the Toorkmans, dragged out a miserable life of servitude at Shurukhs. He was resolved to be free, and chose the opportunity of his master being at an entertainment, to effect his object. He saddled the best horse in the stable; and on the very eve of departure was discovered by his master's daughter, who attempted to give the alarm. He drew his sword, and put the girl to death. Her cries alarmed the mother, whom he also slew: and as he was bidding his final farewell to Shurukhs, the master himself arrived. The speed of the horse, which had so often been employed in the capture of his countrymen, now availed this fugitive, who was pursued, but not overtaken: and thus, by an exertion of desperate boldness, did he regain his liberty, leaving the master to deplore the loss of his wife and his daughter, his slave and his horse.

As we shall soon leave the Toorkmans, we will give a brief description of one of their entertainments when guests are invited. Cakes are baked, about two feet in diameter, and an inch thick, of the coarsest flour, mixed up with slices of pumpkin. When the party assembles, a cloth is spread, and each person crumbles down the piece of cake which is laid before him. The meat is then brought, which generally consists of one entire sheep, boiled in a huge Russian pot. They separate the flesh from the bones, and tear it into as small pieces as the bread, with which it is then mixed. A dozen or more onions are then shred, and the whole, including meat, bread, and onions, is thrown into the hot liquor, or soup in which the sheep was boiled. The mess is then served out in wooden bowls, one of which is placed before every two persons. Each guest then fills his open hand from the bowl, and commencing from the wrist, licks up the soup like a dog, holding his hand and head over the bowl, which receives all that falls. Each of the two in his turn fills his hand, and holds his head over the bowl. Melons follow, and the banquet concludes with a pipe of tobacco. Such is an example of the manners of these children of the desert.

We now reach Mushed, the capital of Khorasan, and one of the most important cities in the Persian empire. The whole city is surrounded by a wall, which is said by the inhabitants to be twelve miles in circumference; but Mr. Fraser does not estimate it at more than one-half that extent. The wall, however, incloses many vacant spaces, which reduce the parts actually inhabited, to a much smaller limit. The whole city appears from the first to have been built of sun-dried bricks or mud, so that everything assumes the monotonous gray earthy colour common to all Persian towns. The approach to the houses is generally through dark lanes and narrow alleys, "guiltless of the smallest attention to cleanliness or convenience." Most Oriental towns are deficient in broad streets, and Mushed is not an exception to this rule. The only street, worthy of the name, is that which extends from north-west to south-east. In the centre of this street runs a canal, the edges of which were once faced with stone; while large slabs of the same material were laid across at intervals as bridges: but many of them have fallen in, and the whole is greatly out of repair. A few trees are ranged along at the sides of the canal, and houses occupy both sides of the street.

The most important public building in Mushed is the Mausoleum of Imaum Reza, described as being one of the most splendid structures to be found anywhere in the East: it is situated in the centre of the city, and the roads leading from all parts of the adjacent country, meet at this spot. The first thing that strikes the eye on arriving at this point, is a noble oblong square, inclosing an area a hundred and sixty yards in length, and seventy-five in breadth, built in the manner of a caravanserai, having two stories of apartments all round, which open in front into a handsome arcaded gallery. In the centre of each side and end, there is a magnificent and very lofty gateway, serving as entrances. The large square inclosed in this manner, which is called the *Sahn*, is flagged with grave-stones, which form almost a continuous pavement, and under which lie the bodies of Persians of noble birth. Three of the gateways lead from the city itself, while the fourth, on the south-west of the square, is the entrance to the grand mausoleum.

This mausoleum comprises a mass of buildings of an octagonal form, and covers an area not much less than that of the *Sahn*. A silver gate admits the devotee into a passage which leads to the chief apartment, beneath a gilded cupola.

This apartment is of magnificent dimensions, rising into a lofty dome above, and branching out below into the form of a cross, the whole being ornamented with polished tiles, covered with azure and gold. The four lateral archways from this central apartment lead to shrines of most costly character. The arch at the north-west leads to a richly-carpeted room, in one corner of which is the shrine containing the ashes of the Caliph Haroun-al-Raschid: the shrine is surrounded by a massy grating of fine-wrought steel, within which is a railing of solid gold, and a door leading to the shrine is plated with gold and covered with jewels. Opposite to this jewelled door, an archway, screened by a curtain, leads to another octagonal apartment, domed, and lined with coloured tiles. This contains the bones of many great men. From the south-west archway in the great central chamber a broad passage leads to a court belonging to a very beautiful mosque. Both sides of this court are formed of buildings similar to those of the *Sahn*, having two stories of niches or compartments: it is paved with flag-stones, and in the centre is a small tank, which, with several jars in different corners, is kept full of water, for the purposes of ablution, or for quenching thirst. The mosque in the middle of this court has but one dome and one archway, which rises to a great height, in a noble screen, that conceals the neck of the dome. At either end of this screen rise minarets of a beautiful form, and the whole is richly decorated with coloured tiles. On each side of the space beneath the dome there are arcaded apartments, with matted floors, for the use of the moolahs, and those who retire to pray or to read the Koran: there is also before the archway a large platform, matted for the convenience of devotees, but the greatest number of these pray under the opposite archway of the mausoleum, or the niches on either side, which are fitted up for the purpose.

But it is necessary now for us to leave Mushed and its gilded mausoleum, and proceed on our journey.

Mushed is situated south-east of the Caspian Sea, and the route by which Europe may be reached is generally by way of Astrabad, on the shores of that sea. This distance is passed through a country beset with dangers of the same kind as those which occur north-east of Mushed. The Toorkmans of the Caspian, as they are called, have nearly the same love of plunder as their brethren, and the traveller has to look sharply about him while on this route. Sir A. Burnes had, through an interview with the Prince Royal of Persia, at Mushed, gained the assistance of a large escort in his future journey. Some Toorkmans had entered the Persian service, and the following incident, related by that traveller, will farther illustrate the manners of this people. "On winding through the valley we had an opportunity of witnessing an interesting sight, in the welcoming of a chief, or 'Aksukal,' who had accompanied us from Koochan. We

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had only known him as a wild Toorkman, and, for my own part, I had scarcely noticed him; but here he was a noble, and what is greater, a patriarch. He had been summoned by the Prince Royal, and now returned to his home. For miles before reaching the camp the Toorkmans crowded about us to bid him welcome: all of them were on horseback, men, women, and children, and several of them cried as they kissed his hand. At length, in a shady and picturesque part of the valley, a party which appeared more respectable than the others, had dismounted and drawn up. This was the family of the chief: he leaped upon the ground with the enthusiasm of a youth, rushed forward, and kissed in succession four boys, who were his sons. The scene was pathetic, and the witty Persians, who had before been imitating some of the actions and exclamations of the Toorkmans, were silenced by this fervent flow of affection. Three of the boys were under ten years of age, yet they mounted their horses with spirit, and joined the cavalcade."

Through a country inhabited by Toorkmans, but subject, nominally at least, to the power of Persia, we travel onward to the shores of the Caspian; during the course of which route we pass through a few towns, but none of importance till we reach Astrabad.

Astrabad is the capital of a small province, bounded on the north by the Caspian Sea and the Toorkman Desert, on the south by the Elburz mountains, on the west by Mazanderan, another Persian province, and on the east by the river Gourgan. The capital is not above ten miles from the shores of the Caspian, and is believed to owe its origin to Yezzid ibu Mehloob, an Arab general, who built it towards the end of the first century of the Mohammedan era. The circumference of the town is about three miles and a half, the whole being surrounded by a high and thick wall, which is now in a ruinous condition. The streets are generally paved, and their cleanliness is promoted by a drain which runs through the centre of them. The town contains but few public buildings worthy of note. When Sir A. Burnes passed through it, he found it devastated by the plague which had visited it a short time before. Half the shops and houses were closed, literally for want of masters; and the whole town presented a very dreary and desolate appearance.

From Astrabad we proceed through the provinces of Astrabad and Mazanderan, to Teheran, the present capital of Persia. This district, like many others in the East, is frequently attacked with the plague, which produces sad devastation. An English traveller was informed by an inhabitant of one of the towns that he had lost a son by the disease, and that he and his wife had both been attacked. She was nursing a child at the time; and though she continued to suckle it, the infant escaped the danger. The man stated that he had had the horror to see his own child dragged to the door by eight or ten cats, whom he with difficulty scared away; and affirmed it as his belief, that more people were killed by dogs and cats on the occasion, or died from hunger, than from the disease itself.

Teheran is approached from the east either by horses or mules, through a country which presents few natural points of interest.

Here we take leave of our journey. We have before described Teheran, and on two former occasions have traced the overland route from about Teheran to Europe, 1st.—through the provinces between the Caspian and Black Seas, and thence through Russia: and 2nd.—along the northern shore of Asia Minor to Constantinople. It will not be necessary, therefore, to go again over this ground. The countries through which we have passed have been very rarely indeed visited by Europeans, and are inhabited by nations possessing, generally speaking, considerable vigour of character. The Seikhs of the Punjaub, the Afghans of Caubul, the Uzbeks of Balkh and Bokhara, and the Toorkmans of the sandy desert forming the northern boundary of Caubul and Khorasan, are all distinguished by such characteristics as make a journey among them no light matter. The overland journey is sometimes made in a direction somewhat more southerly, from Delhi towards Moultan near the Indus; thence to Candahar, in the middle of Caubul; thence to Herat, at the boundary between Caubul and Persia; and from Herat to Mushed. But the nature of the travelling along this route, and the objects met with by the way, do not differ much in character from those which have here engaged our attention.

A TOORKMAN CAMP.

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BRITISH GUYANA.

NATIVE HUT AND CANOES.

V. The Demerara and Berbice Rivers.

Having described the scenery and chief points of interest on the Essequibo river and its tributaries, we shall be able to dismiss in a narrower space our notice of the remaining rivers.

The river Demerara is situated between the Essequibo and the Berbice, and is navigable for ships of burden to a distance of about one hundred miles. For thirty miles from the mouth the country on the banks consists of extensive level meadows; then succeed numerous sand-hills; and lastly a hilly region occurs, which gives rise to cataracts and rapids, at a distance of about a hundred miles from the source. The banks of the river present nearly the same appearance as those before spoken of, and the white inhabitants become more and more scattered the farther we ascend the river. The natives have many habits and usages peculiar to this part of the country, and among them we may mention the remarkable mode of catching birds by the "blow-pipe."

A reed grows in Guyana to the length of twelve or fourteen feet, perfectly straight and uniform throughout its whole length, hollow, free from knots or joints, of a bright yellow colour, and perfectly smooth inside and out. Another kind of reed or stem also grows there, which is brown, knotted at intervals, and susceptible of a fine polish. The natives collect one of each of these kinds, extract the pith from the larger stem, and insert the reed within it, thus giving strength to the reed. This forms the blow-pipe of the Indian, into which he inserts a short arrow, and applies one end to his mouth, to blow the arrow out. The arrow is about ten inches long, and is made out of the leaf of a species of palm-tree, hard and brittle, and pointed as sharp as a needle. The middle of the arrow is bound round with cotton, to make it nearly fit the tube: one end is scorched, to make it harder, and the other end is poisoned. A quiver is provided which will hold five or six hundred arrows.

With a quiver of poisoned arrows slung at his back, and the blow-pipe in his hand, the bird-hunter advances cautiously to the woody region where the birds are located. When he espies a bird within arrow-distance, he takes a poisoned arrow from his quiver, puts it in the blow-pipe, directs the tube towards the bird, applies it to his mouth, and blows strongly and suddenly through it. Seldom does he miss the object of his aim. If the bird be struck, or if the skin merely be pierced, it is generally dead within three minutes afterwards. The bow and poisoned arrows are also employed by the natives in their search for large birds and quadrupeds.

The river Berbice, which is eastward of the Demerara, was but little known until explored by Mr. Schomburghk, in 1836–7. When this part of the colony was in the hands of the Dutch East India Company, there were settlements on the banks of the river to a distance of

sixty miles from the sea, but now, from various causes, there are but few white inhabitants met with above the town of New Amsterdam. At one spot Mr. S. met with a neat cottage, the proprietor of which (a Dutchman) cultivated rice, and received the travellers very kindly. Farther on he met with a large wood-cutting establishment, belonging to a Mr. M'Cullum, and employing about two hundred Indians and fifty negroes: these men fell the trees, and square the timber. The Indians were kindly treated by their employer, and are said to be excellent working servants, but there are some proprietors of land who act unfairly and ungenerously towards these tribes: they supply an Indian with articles on credit, sometimes to a large amount, provided he is able to work, being aware that the Indian deems himself in duty bound to work for his creditor until the debt is paid: but many wood-cutters use every means to prevent his getting out of debt, by constantly supplying him with more goods and large quantities of rum, whereby the poor Indian is kept in a state of bondage. To lessen this evil, a protector of Indians has been appointed.

The natives pass on the shallow parts of this river in very flat, shallow, light canoes, called woodskins. They are made of a single piece of the tough bark of the *murianara* tree, which grows to a very large size: an incision is made in the bark to the extent required, and it is then removed by driving in wedges: when loosened from the wood the bark is kept open by cross-sticks, and is supported at the extremities upon two beams. Vertical incisions, about two feet asunder, and a few inches in depth are then made, and the parts secured by overlapping. This frail boat, although one man can carry it with ease on his head, frequently holds three persons and a quantity of luggage, in passing through the shallow parts of the Berbice river.

High up the river the party came to a spot where the contracted stream forms an entrance to a natural basin, bordered by hills, and here occurred a fall, not very deep, but of too great rapidity to permit the canoes and boats to be forced up it, which was done in many other instances. The party therefore hauled up, and conveyed the baggage by hand to the head of the fall, but the large canoes, or *corials*, were forced through the rushing water. Hendrick, a courageous Indian, gained one of the rocks in the middle of the cataract, and seized the end of a boat-rope which was thrown to him. He then carried it to a less dangerous place, to which some of the other Indians had arrived by swimming; and the whole party then drew the corial by main strength up the opposing current. In effecting the same object with another corial Hendrick lost his footing in the middle of the cataract, and was swept away, but being just enabled to grasp tightly a rope thrown out to him, he was fortunately saved.

This part of the river abounds in *kaymans*, or large alligators, animals which appear to be very tenacious of life. On one occasion a kayman was shot, the ball taking off the end of the snout: another ball was lodged in the hinder part of the skull; and after the Indians had beaten the animal till life appeared to be extinct, it was lifted out of the water, and placed in the bow of the corial. When, soon afterwards, the corial had to be drawn up a rapid, the kayman was in the way, and two men took it up, to move it to a more convenient place; but scarcely had they done so when it suddenly leaped into the water. On another occasion, when a kayman had been shot and taken, a piece of the windpipe three inches in length was cut out, to ensure the death of the animal, but it was still found living the next day, and was only finally despatched by piercing the brain with a sharp knife.

Snakes of rather a fearful size are found on the banks of the river. One measuring sixteen feet in length and twenty-eight inches in circumference was seen by the party close to the shore. Hendrick jumped ashore, and dexterously slipped a noose round its head, and was on the point of securing it, when the snake turned round and made a motion as if to dart at him. At this attack all his courage forsook him, and he retreated with precipitation over bushes and rocks into the water. The other Indians stood petrified, and could not be persuaded to put a finger to the rope by which the snake was held. At this juncture a timely shot from one of the party despatched the snake and redeemed the rope.

It was on the 1st of January, 1837, that Mr. Schomburghk, somewhat dispirited at the toils and difficulties which he had encountered, met with that wonderful flower which, at his request, was named after Her Majesty, and which the reader will call to mind as the *Victoria regia*. He says:—

Some object on the southern point of the basin attracted my attention: I could not form any idea of what it might be, and I hurried the crew to increase the rate of their paddling: in a short time we were opposite the object of our curiosity,—a vegetable wonder. All calamities were forgotten; I felt as a botanist, and felt myself rewarded. A gigantic leaf, from five to six feet in diameter, salver-shaped, with a broad rim of a light green above, and a vivid crimson below, rested upon the water: quite in character with the wonderful leaf was the luxuriant flower, consisting of many hundred petals, passing in alternate tints, from pure white to rose and pink. The smooth water was covered with them, and I rowed from one to the other, observing always something new to be admired.

Mr. Schomburghk then proceeds to describe more minutely the botanical features of the flower, but this description we must pass over.

Our travellers espied a large herd of *kairounies*, or Indian hogs, and, as their stock of provisions was getting low, an attack on the herd was resolved on. The hogs were wallowing in a pool of muddy water, one being left as sentinel to give the alarm if an enemy approached. This sentinel was fired at, and immediately the whole herd of two hundred scampered off in an opposite direction. The party dispersed in various directions to shoot some of the hogs during their retreat, but it so happened that the Indians unintentionally drove the herd towards the spot where Mr. Schomburghk was standing alone.

I heard a rushing noise (he says) like a whirlwind, approaching through the bushes: the peculiar growl, and that awful clapping of the teeth, did not leave me long in doubt as to its cause: it was evident that the herd had divided, and were coming directly towards me. I stood alone, unarmed, and had not even a knife to defend myself. I know not yet how I climbed the lower part of a mora tree, when by they rushed, their muzzles almost sweeping the ground, and their rough bristles on the back standing erect. They came past like a whirlwind, and before I had recovered from my astonishment I heard them plunge into the river, and swim over to the opposite bank.

When the party had explored the river Berbice almost to its source, they returned, and on approaching near the settlements Mr. Schomburghk lost by death an enterprising young companion who had shared his dangers and toils. On February 11 this gentleman, Mr. Reuss, suddenly became low-spirited, and said "he knew he should die young." On the following day the corials had to be directed down a rapid and cataract by the skill of some of the Indians. Mr. Reuss determined to make one of the party, against all the solicitations of Mr. Schomburghk. The corial was launched down the rapid, Mr. Reuss standing when he ought to have been seated, and, by some bad management the corial became upset, and all the crew precipitated into the river. Mr. Reuss was drowned, and his companions had the melancholy task of interring him on the banks of the river.

The travellers had not seen a human habitation of any kind for the space of two months, when, on the 20th February they arrived at some Indian huts. From thence they proceeded to the European settlements, and finally came to New Amsterdam, from whence they started.

We now conclude our notice of British Guyana. There are one or two other rivers which we have not particularly noticed, but the notable objects presented by them so nearly resemble others which have already engaged our attention, as to preclude the necessity for farther description. The reader will gather from these details, that British Guyana is a beautiful and fruitful country, abounding in animals and plants of various kinds,—thinly inhabited by dark-skinned natives, who are generally of a peaceful character,—and by colonists at a few towns situated near the mouths of three or four rivers flowing northward into the Atlantic.

DO STONES GROW?

THE opinion that stones grow and increase in size is very popular, and very erroneous. We hear it stated by many persons with all the certainty of a well attested fact, and yet there are few vulgar errors which rest upon a more flimsy foundation.

A writer, who, by the ease and familiarity of his style first attempts to render a very difficult subject popular, often runs the risk of diffusing error as well as truth. M. de Tournefort, the immediate predecessor of Linnæus, deprived botany of much of its forbidding aspect, and greatly promoted its study by a new system of classification and a new and easier method of description. In 1702, after returning from his travels in the Levant, he wrote an account, among other objects, of the botanical productions which he had examined during his travels. In surveying the labyrinth of Crete he observed that the names which visitors had engraved upon the rock were not formed of hollow but of prominent letters, like bassorelievos. He supposes that these letters were at first hollowed out by knives; that the hollows have since been filled up by the growth of the stone; and hence he indulges in the fancy that stones increase in size like the productions of the vegetable world which constituted his favourite study.

The pleasing style of Tournefort's Travels caused his book to be much read, and hence arose the popular error that stones grow. It would be satisfactory to be well assured that the letters were at first hollowed, before attempting to account for their prominency; but assuming the fact to be as he states it, we proceed to state a few of the conditions necessary to the growth or enlargement of matter.

The various objects of the material world are conveniently arranged into two great classes, the organized and the unorganized: the former includes animals and plants, and the latter minerals. In animals and plants we observe a system of organs, gradually rising from a very simple to a very complex method of arrangement, and destined to the performance of certain *vital* functions. In minerals we find none of these organs, and consequently there cannot exist in them the vital principle which is the distinctive character of the former. We readily admit also that vitality was not present in minerals during their formation; but the slightest trace of organization in any natural body is a clear proof that life does exist or has existed in it. Unorganized bodies are made up of elementary atoms, or of proximate principles, in which elementary atoms are united in certain definite proportions. When these are brought together in a gradual manner by the force of affinity from a state of solution or of fusion, they assume various geometric forms called crystals. These crystals can only increase in size by the addition of other atoms to their *external* surfaces, and it often happens that this increase goes on to an indefinite extent; the original crystalline form being constantly maintained. Should the circumstances under which these crystalline forms are produced cease to operate, the atoms may still unite and form shapeless masses which, however, possess the same definite character of composition as if they had been recently crystallized. Rocks and stones, the ocean and the atmosphere, are mixtures of simple minerals, or of the simple substances of which the latter are formed. The earth itself, and probably the various heavenly bodies, are regarded as large masses of mineral or unorganized matter.

Although an animal or a plant is in substance composed of the same simple atoms as those which compose minerals, yet they are eminently distinguishable from the latter by the manner in which they increase in bulk. The various organs of such bodies are not, as in the structure of minerals, similarly composed throughout; they increase by the assimilation of food, which being received into the system through certain cavities or vessels, is formed by peculiar processes into specific compounds, adapted to the nutrition and growth of the animal or plant. Now, in the example furnished by Tournefort, the protuberancy of the characters cannot be called growth, nor, as he terms it, vegetation; because it is, in no respect, effected by a process similar to the vegetation of a plant. Vegetation supposes vessels containing fluids and growth by expansion; but would any one contend for a moment for the existence of vessels in a stone; of fluids moving in them; or of the different parts expanding and swelling like the branch or trunk of a tree? Even the fact, as stated by Tournefort, proves nothing; for he does not pretend that the rock itself is increasing in bulk, but only that a few insignificant hollows have become filled up with fresh stony particles which project a little beyond the general surface of the rock. This filling up may be explained by referring to the process by which stalactites are formed. When water saturated with calcareous matter is exposed to the air, the water evaporates, and the calcareous earth remains behind and gradually hardens into stone.

The popular notion that stones grow, has led to the practice of watering coals and keeping them wet for a long time before they are used. The effect of this practice is simply this: When the wet coals are thrown upon the fire they cannot burn until the greater part of the moisture is converted into steam, and thus dissipated; a large portion of the heat which would otherwise warm the apartment is now lost; for it combines with the water to form steam, which, with the smoke, ascends the chimney instead of radiating into the apartment.

The distinctions which we have pointed out between organized and unorganized matter will be sufficient to show that a negative answer must be given to the question, "Do stones grow?" The precise limits between minerals and organized bodies may be considered as ascertained; but the line of demarcation between the two kingdoms of organized nature is by no means precise. However simple the questions may appear, "What is a plant?" and, "What is an animal?" naturalists have found great difficulty in answering them in such a manner as to satisfy all the conditions under which organized matter is found. For a long time it was considered satisfactory to define a plant as "a being with life and without the power of locomotion," and an animal as "a being possessing life and the power of locomotion;" but such definitions lost their value when it was found that some of the lower tribes of animals had not the power of moving about from place to place; and that some plants could do so to a certain extent. Perhaps the most constant distinction between these two great classes is the presence in animals of internal *sacs* or *stomachs* for the reception of food; organs with which plants are not furnished.

There is no difficulty in admitting that plants, in common with animals, possess vital energy, which distinguishes them from inert matter, and displays itself by its effects. If we would extend the inquiry beyond the examination of these effects, and seek to know what *vitality* is, we are soon brought to a pause, and admit the inefficiency of our means to penetrate those mysteries

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which the Almighty has concealed from us. We see that vitality and organization accompany each other; but vitality does not depend on mere structure; it is not produced by respiration alone, although this process seems necessary to it; it is not heat, for this is only an effect of vitality, although a certain degree of temperature favours it; our most refined chemistry scarcely leads us one step nearer to the cause of this wondrous principle; vitality resists those combinations in organized bodies which so unerringly occur when life is extinct. The flights of imagination as well as the sober reasonings of philosophy, fail to inform us of its nature: we can only regard its effects in silent admiration, and think of it as that divine emanation from the Almighty, first communicated to man when "He breathed into his nostrils the breath of life."

ON CHESS.

XI. CHESS-WRITERS AND PLAYERS, (*continued.*)

CHESS-PAWN, AS DESIGNED BY FLAXMAN.

Bright in the front the dauntless soldiers raise
Their polished spears: their steelly helmets blaze.
Prepared they stand, the daring foe to strike,
Direct their progress, but their wounds oblique.
SIR WILLIAM JONES.

In the early part of the eighteenth century Captain Joseph Bertin obtained a distinguished rank among chess players. He seems intitled to the merit of having invented the "Three pawns' gambit:" which being afterwards adopted by the celebrated player Cunningham, it was named by Philidor "the Cunningham gambit," by which term it has since been known; but, as Mr. Walker remarks, from its construction involving a sacrifice of three pawns, it is more correct to term it the *Three pawns' gambit.* In 1735 Captain Bertin published a small work, entitled "The noble Game of Chess." "Printed for the Author, and sold only at Slaughter's Coffee-house, in St. Martin's Lane." This work contains the laws, twenty-six games, and twelve endings. Among his rules, the author makes a remark which every chess player will appreciate:—"I wish I could give rules to avoid oversights."

Mr. Cunningham, the critic and editor of Horace, a gentleman of taste and learning, had moreover the reputation of being the first chess-player in Europe. His acquirements gained him the friendship of many distinguished persons. It is said that while Lord Sunderland and Mr. Cunningham were at the Hague, they frequently played at chess, and after continuing to play for some time his lordship discovered that if either one before playing was jolted in the carriage, in passing over the rough streets of the Hague, he was generally the loser. For this reason his lordship discontinued going to Cunningham, but for some time sent for him. Under this new arrangement Mr. Cunningham found, to his no small astonishment, that he lost most of his games; and when the plan was at length revealed, he insisted that the visits should be reciprocated. This new arrangement is said to have restored the former ratio of success between them; but, as was remarked to Mr. Twiss, those who believe in this anecdote must think that the head of a chess player, before he plays, must be moved as carefully as a bottle of old port before it be decanted.

During Mr. Cunningham's residence at the Hague, a German prince, having heard of his great skill at chess, sent him an invitation to go and play on a certain day. Mr. Cunningham, who had acquired an European reputation in chess, did not choose to risk it against a stranger, and therefore asked Mr. Ogilvie, a Scottish gentleman in the Dutch service, to pay a visit to the prince as Mr. Cunningham's pupil. This was agreed to, and Mr. Ogilvie waited upon the prince with a note from Mr. Cunningham to the effect that he could not avail himself of the honour of accepting the prince's invitation for the hour named, but that he had sent one of his pupils to attend in his place, and in the event of his being beaten, Mr. Cunningham would himself attend and play with the prince. Mr. Ogilvie beat the prince in every game; which so greatly mortified him, that, thinking the master would vanquish him still more easily than the pupil, left the Hague on the following morning without even waiting to see Mr. Cunningham.

This distinguished player died in his native country, Scotland, in 1732, more than eighty years of age.

The next player of eminence is Philippe Stamma, who styles himself "native of Aleppo in Syria, and interpreter of the oriental languages to the King of Great Britain." He published at Paris in 1737 a small work containing a hundred situations or ends of games: many of these are very instructive, and ought to be known by every chess student: others, says Sarratt, there is every reason to believe, never occurred in the course of a game, and it may be doubted whether they could occur. We may add that the same remark also applies to many of the chess problems of our own day.

In an edition of this work in French, published by Stamma at the Hague in 1741, and dedicated to Lord Harrington, we find the following amusing anecdote among the rules and cautions which he gives to the chess student:—

Be very careful how you capture a piece which your adversary offers you for nothing: for he intends either to win one of your superior pieces, or to give you check-mate. This stratagem is frequently practised among good Arabian players.

It is related that a young man of this country, still under paternal authority, having learnt the game of chess, took so much pleasure in it that he neglected everything else. His father having often reprimanded him without effect, became at last so angry that he threatened one day to kill him. The son fell on his knees, demanded pardon, and stated that this game was more useful than his father seemed to think it; but that he would continue to play no more. After a moment's reflection the father demanded the use of such a game, for he could see none, except it were to encourage idleness. "My father," replied the son, "this game teaches me many things that will be very useful to me during my future life. If for the good of my country I were required to go to the wars, this game teaches me how to fight with advantage. If I were on a journey, and robbers were to attack me, I should know better how to defend myself than one who has not acquired skill in this game."

"Tell me how this is possible," said the father. "You must put me to the proof;" responded the son. The father did so: he sent his son on a distant journey, with a large sum of money to buy merchandise.

When the young man was on his road, the father sent four men after him to rob him. When the son found himself opposed to these robbers, he dismounted quickly, abandoned his horse, and taking refuge behind walls and hedges, escaped. He then accomplished the object of his journey, and succeeded in bringing his merchandise safely home.

He then related to his father what had happened. "As

soon as I was attacked," said he, "I bethought myself of an expedient frequently adopted at chess, viz., to sacrifice my horse to save my life and my money; in the same way as at chess I sometimes sacrifice my knight, in order to save my king or my queen."

The father was so much pleased with the skill and address of his son, that he not only forgave him, but determined to learn the game. This little story, says Stamma, is far more pleasantly related in the Arabic, in which language the knight is called the horse.

Stamma was in London in 1745, and published an improved edition of his treatise, which has since been edited with notes by Mr. Lewis. In 1747, Stamma tried his skill against Philidor in a match of en games; Philidor giving him the move, and allowing a drawn game to be a lost one. With these advantages Stamma won only two games, of which one was a drawn game.

As it is our intention to *conclude* these brief notices of chess players and writers with an account of Philidor, we proceed to notice a few of the principal satellites which, during a considerable portion of the last century, hovered round the greatest luminary that ever threw lustre on the science of chess.

In 1750, a treatise entitled "Practical and Theoretical observations on the Game of Chess," was published at Modena. "The author," says Sarratt, "chose to conceal his name, and it is difficult to assign a satisfactory reason for his diffidence, for it is unquestionably a publication of great merit and real utility." For many years the author of this book was referred to as "The Anonymous Modenese," but it is now known that Dr. Ercole del Rio was the author. In 1820, Mr. Bingham published "The incomparable Game of Chess developed after a new method of the greatest facility, from the first elements to the most scientific artifices of the game." This high sounding title, which, like all such, promises more than it performs, is applied to a work which professes to be a translation from the Italian of Del Rio, whereas the real author is Domenico Canonico Ponziani, an advocate in the Ecclesiastical Courts, and a friend of Del Rio, who was an advocate in the Civil Courts. Mr. Bingham has translated the third edition of this book, published at Venice in 1812, which is greatly inferior to the second, published at Modena in 1782, the third, as Mr. Cochrane thinks, being probably a reprint of the first. In the advertisement to the second edition, Ponziani is distinctly stated to be the author, and is said to have been assisted by his friend Del Rio, in the composition of the work.

The work of Del Rio received a commentary from the labours of Lolli in 1763. This commentary, (a folio volume of 632 pages,) "like that of Coke upon Littleton, or of a Dutch scholiast upon a classic, exceeds a hundred-fold the bulk of the original work." The size of this book, adds Mr. Cochrane, was, on its first publication, ridiculed in Baretti's *Frusta Literaria*. It is, however, the most complete and valuable treatise on chess which has hitherto appeared. This high praise was given by Mr. Cochrane in 1822, and although many valuable works on chess have appeared since that time, Mr. Walker, in the third edition of his excellent treatise, (1841,) does not hesitate to pronounce Lolli's "the most *classical* work on chess extant."

We conclude the present article with an amusing anecdote, related of the Duke de Nivernois:—

When this accomplished nobleman was ambassador to England, he was going to Lord Townsend's seat, at Rainham in Norfolk, on a private visit, *en déshabille*, and with only one servant, when he was obliged by a very heavy shower to stop at a farm-house in the way. The master of the house was a clergyman, who, to a small curacy, added the care of a few scholars in the neighbourhood; which in all might make his living about eighty pounds a year: this was all he had to maintain a wife and six children. When the duke alighted, the clergyman, not knowing his rank, begged him to come in and dry himself; which the other accepted, by borrowing a pair of old worsted stockings and slippers, and warming himself by a good fire. After some conversation, the duke observed an old chess-board hanging up; and, as he was passionately fond of the game, he asked the clergyman whether he could play. The latter told him, that he could play pretty tolerably; but found it difficult in that part of the country to get an antagonist. "I am your man," says the duke. "With all my heart," answers the clergyman; "and if you will stay and take pot-luck, I will see if I cannot beat you." The day continuing rainy, the duke accepted his offer; when his antagonist played so well, that he won every game. This was so far from fretting the duke, that he was pleased to meet a man who could give him so much entertainment at his favourite game. He accordingly inquired into the state of his family affairs; and making a memorandum of his address, without discovering his title, thanked him, and departed.

Some months elapsed, and the clergyman thought no more of the matter, when, one evening, a footman rode up to the door, and presented him with a note.—"The duke de Nivernois' compliments wait on the Rev. Mr. ———; and as a remembrance for the good drubbing he gave him at chess, begs that he will accept the living of ———, worth 400*l.* per annum; and that he will wait upon his Grace the Duke of Newcastle on Friday next, to thank him for the same."

The good clergyman was some time before he could imagine it to be any more than a jest, and hesitated to obey the mandate; but as his wife insisted on his making a trial, he went up to town, and, to his unspeakable satisfaction, found the contents of the note literally true.

ON THE PRESERVATION OF TIMBER.

When we consider how large a quantity of timber is necessary to the construction of a ship, and when it is stated that the average durability of the vessels of the Royal Navy does not exceed fifteen years, we readily admit the vast importance of any successful means of counteracting those deteriorating influences to which large combinations of wood-work are peculiarly liable.

Vegetable matter, in common with all organic substances, is subject to decomposition and decay, as soon as life becomes extinct; and although the process is comparatively slower in its commencement and progress in vegetable than in animal matter, it is not under ordinary circumstances, the less certain. During the existence of a plant, its various organs, under the influence of the mysterious principle of life, perform their respective functions in a manner similar to that of which we are more readily conscious in the animal frame. The plant absorbs its food from the soil and the surrounding air; it digests that food under the influence of respiration, and prepares rich and nutritive juices which circulate throughout its whole vegetable frame, and deposit materials of growth wherever they are wanted; it sheds its leaves in Autumn, undergoes a season of torpor, and again becomes active and vigorous: thus it is clad in fresh leafy honours in the following Spring. All this is the effect, or rather the result, of vitality. The plant dies; and then its constituent parts gradually assert their individual existence, and resume their original affinities. Some pass into the air; some form new compounds; and others, which during the life of the plant ministered to its healthy action, now work energetically and destructively on each other: so that the original mass gradually decomposes under the influence of various causes. The first step to decay is a process of fermentation, which is more or less rapid, in proportion as heat and moisture are more or less present. In the absence of damp air, even the vegetable mass will of itself supply moisture; for, according to Count Rumford, the best seasoned timber retains one-fourth of its weight of water. A certain extent of moisture is

essential to vegetable fermentation; but a complete saturation appears inimical to it. A temperature not so low as to produce freezing, nor so high as to produce rapid evaporation, is also favourable to it. The humidity of the air in ships, and the difficulty of obtaining a free circulation of air, contribute greatly to this fermentative process.

The chemical constitution of the vegetable kingdom yields to analysis only three or four ultimate elements, viz., oxygen, hydrogen, and carbon; and sometimes nitrogen. The most active agent in the process of decomposition is the oxygen contained in the dead plant, whether such decomposition proceed under the rapid influence of fermentation, or be produced more slowly by the operation of the law which renders decay the necessary consequence of organization. As soon as the tree is felled the oxygen begins to be liberated and to act upon the woody fibre, combining with its carbon and producing carbonic acid gas. The tenacity of the several parts is thus gradually destroyed. After timber is felled, and during the process of seasoning, a gradual diminution of strength may be remarked. The effect, however, of seasoning is to deprive the wood of superabundant moisture, and of those vegetable juices which would otherwise induce a rapid decomposition.

In addition to the natural decay of timber, the decomposition is often accompanied by the apparently spontaneous vegetation of parasitical fungi, inducing a species of decay to which the term "dry rot" is applied, probably in consequence of the attendant phenomena; the wood being converted into a *dry* friable mass, destitute of fibrous tenacity. It is uncertain whether the seeds of these fungi exist in a dormant state in the juices of the timber, and wait only until the first stages of decomposition furnish them with a nidus favourable to their growth; or whether they float in the atmosphere and settle in places favourable to their vegetation. It is found, however, that badly seasoned timber is peculiarly subject to this species of decay.; and hereby the former of the two suppositions just advanced is favoured.

From the moment when timber is felled the process of decay commences, and although so slowly in many cases that we are not conscious of it, yet there is a limit to the existence of the most durable articles of wood, however carefully preserved. Dryness, cleanliness, a free circulation of air, or the entire exclusion of it, are among the best checks to vegetable decomposition; while damp accumulations, and a vitiated atmosphere, rapidly induce it.

Unseasoned timber should never be used in ship-building, and the best seasoned timber should be used only in a dry state. Diseased and decayed portions of the wood should be cut out, together with the sap-wood, which, being more soft and porous than the spine, is more liable to fermentation.

The iron fastenings used about timber frequently cause its premature decay. Iron under the influence of moisture becomes rusty,—that is, oxygen, either from the air or from the wood itself, unites with the metal, forming an oxide, which, in its turn, acts upon the woody fibre, and gradually destroys its tenacity. The iron is further subject to attack from the acid juices of the wood: this effect, however, varies in different woods. Oak contains a smaller proportion of oily or resinous particles than many other kinds of wood; and, in addition to the usual vegetable acid common to most woods, oak contains an acid peculiar to itself, called *gallic* acid; in teak, on the contrary, the quantity of acid is not only smaller, but the resinous particles are very abundant, and these form a sort of protecting covering to the iron fastenings. Mackonochie states, on the authority of the shipping built in India and used in the India trade, that the average duration of an iron-fastened teak ship is thirty years; and that it is a misapplication of expense to use copper fastenings with teak, as the additional advantage gained is not at all commensurate with the additional expense. But it is different with oak: the action of oak on copper is by no means so destructive as on iron, and the reaction of the metal on the wood is not so destructive.

The methods which have been from time to time adopted for the preservation of timber are so numerous that a slight sketch of them would probably fill a good-sized volume. We will name a few of the most successful, and terminate this notice with a description of the method now in practice.

Mackonochie recommends all the iron fastenings to be provided with a protecting paint, and to impregnate the timber with some oily preparation, which he proposes to effect thus: the wood is to be placed in a steam-tight chamber, and subjected to the action of steam, by which the air will be expelled from the timber. Then by condensing the steam, and repeating the process until all the elastic fluids are withdrawn from the wood, and its juices converted into vapour, the wood becomes freed from them; and if plunged into oil, and subjected to atmospheric pressure, all the internal cavities of the wood will be filled with oil. In this way Mackonochie had in daily use a steam-chamber capable of containing twenty or thirty planks of timber, forty feet long, in which, while the planks were steaming, to render them flexible, they were impregnated with teak oil. He says the oil may easily be procured from the chips and saw-dust used for the fuel of the steam-boilers; for it has been ascertained that Malabar teak contains such a quantity of oleaginous (oily) or terebinthinous (turpentine) matter, that the chips from the timber and planks of a ship built of it will yield, by a proper process, a sufficient quantity of tar for all its own purposes including the rigging; and that, although oak timber does not contain so much of these substances, the chips of the fir alone consumed in the Royal Navy, would be more than sufficient to supply tar to saturate the oak.

There have been many other proposals to saturate timber with different substances; the most successful of which, up to the process of Mr. Kyan, was that of M. Pallas, whose plan was to saturate the timber in a solution of sulphate of iron, and then precipitate the salt by means of lime-water. About the year 1822 Mr. Bill produced samples of timber impregnated throughout with a substance resembling asphaltum. These samples were subjected to a trial of five years in the dry-rot pit at Woolwich, and withstood the fungus-rot perfectly. Sir John Barrow recommends kreosote, which he says "in a vaporous form penetrates every part of the largest logs, and renders the wood almost as hard as iron,—so hard as not easily to be worked."

Mr. Kyan's plan, now so universally adopted, is to soak the timber in a solution of bichloride of mercury, commonly called corrosive sublimate.

Aware of the established affinity of corrosive sublimate for albumen, Mr. Kyan applied that substance to solutions of vegetable matter, both acetous and saccharine, on which he was then operating, and in which albumen was a constituent, with a view to preserve them in a quiescent and incorruptible state; and obtaining a confirmation of his opinions by the fact, that during a period of three years the acetous solution, openly exposed to atmospheric air, had not become putrid, nor had the saccharine decoction yielded to the vinous or acetous stages of fermentation, but were in a high state of preservation, he concluded that corrosive sublimate, by combination with albumen, was a protection against the natural changes of vegetable matter. He conceived, therefore, if albumen made a part of wood, the latter would be protected by converting that albumen into a compound of protochloride of mercury and albumen; and he proceeded to immerse pieces of wood in this solution, and obtained the same result as that which he had ascertained with regard to the vegetable decoctions.——BIRKBECK.

It having been found that the precipitate caused by the Kyanization was soluble in salt water, Sir William Burnett has lately substituted chloride of zinc for corrosive

sublimate, and the resulting compound which this forms with the albuminous portion of the wood, effectually resists the action of salt water.

THE CADDIS, OR SPRING FLY.

GREAT is the variety of insects to be observed at this season of the year, in the vicinity of pools and shallow streams of water. The labours of naturalists have taught us to distinguish many of these beautiful forms, and to refer them to their respective families; but how impossible does it appear for an ordinary observer to attain to more than a very superficial acquaintance with them, or to view without bewilderment the diversified shapes and colours of aquatic insects only. Among their numerous tribes, few can be found more interesting to the angler, than the may-flies and caddis-flies which form some of his most important living baits: these insects are highly curious in their larva state on account of the singular nature of the covering with which they invest themselves. Some particulars relative to the *Phryganea* or caddis-fly will doubtless prove acceptable to many of our readers.

The larva of the caddis insect may be seen crawling upon subaquatic plants, or lying passive at the bottom of our clear streams, enclosed in a case of its own construction, the materials of which are very different in different species. In many popular descriptions of insects caddis-worms are spoken of as constituting but one species, and as selecting indifferently from the materials around them, those best adapted to form a protection to their bodies. The Linnæan genus Phryganea, has, however, been found to contain about two hundred British species, and it is little doubted by our best authorities but that each of these has its own method of working, and consequently its own particular form of case. Izaak Walton was not ignorant of this, for we find him speaking in his chapter on baits, of "divers kinds of *cadis* or *case-worms* that are to be found in this nation, in several distinct counties and in several little brooks that relate to larger rivers." Respecting these varieties of caddis he has many directions to give, and of three of them he enters into a particular description. The first he calls *a piper*, "whose husk or case is a piece of reed about an inch long, or longer, and as big about as the compass of a two-pence." This description of caddis-worm is commended by the worthy angler as a choice bait for chub or chavender, or indeed for any great fish. "There is also," he continues, "a lesser cadis-worm, called a *cock-spur*, being in fashion like the spur of a cock, sharp at one end; and the case or house in which this dwells is made of small husks and gravel and slime most curiously made of these, even so as to be wondered at, but not to be made by man, no more than a kingfisher's nest can, which is made of little fishes' bones, and have such a geometrical interweaving and connexion as the like is not to be done by the art of man. This kind of cadis is a choice bait for any float-fish. There is also another cadis, called by some a *straw-worm* and by some a *ruff-coat*, whose house or case is made of little pieces of bents and rushes and straws and water-weeds, and I know not what; which are so knit together with condensed slime, that they stick about her husk or case not unlike the bristles of a hedge-hog."

The faculty is indeed worthy of our admiration which enables these little worms to provide for their own safety at a period of their being, when, their bodies being very soft and tender, they would be exposed to more than ordinary danger. The cases of all caddis-worms have one feature in common, that is, they consist of a cylindrical tube open at both ends. Some of these tubes are simply formed of a slender and narrow bit of grass, which is rolled in a beautiful spiral direction; others are concealed by a drapery of leaves falling over them in a natural and graceful manner; and others are entirely covered with shells, some of which occasionally contain living snails fixed in that position without the power of moving. The worm keeps possession of its case by means of two hooks situated at the extremity of the body, and so firmly do these hooks maintain their hold, that it is almost impossible to separate the insect from its case without injuring it. The caddis-worm has a long body, and the legs, six in number, are situated on the first three segments near the head. These are the only portions which are generally exposed in walking, and they differ from the rest of the body in being firm and hard and little liable to injury. Mr. Rennie made repeated experiments with caddis-worms to ascertain their mode of building. He deprived them of their coverings and furnished them with materials for constructing new ones, watching their proceedings throughout. He describes them as working at the commencement in a very clumsy manner, attaching a great number of chips to whatever materials may be within their reach with loose threads of silk, and thus surrounding themselves with materials many of which are never used in the perfect building. Unskilful as their efforts may at first appear, there is much wisdom in this aggregation of all the substances within their reach, before their dwelling is actually commenced; for when these preparations are completed, they are able to devote their whole attention to the building, and to select the requisite materials from the heap close at hand. The natural cement used by the caddis-worm to unite together the rushes, sticks, stones, &c., of which its house is composed is said to be superior in standing water, to *pozzolana*, the celebrated cement prepared of volcanic earth, or larva. As soon as the dwellings are sufficiently advanced, the larvæ shut themselves up in them and do not again protrude more than the half of their bodies to procure materials. It is not to be supposed that the caddis-worm is regulated in its choice of a proper covering for its body, simply by the instinct of self-preservation from danger: this little creature has an instinctive knowledge that when the covering is made of stones, sticks, or shells glued together, the dwelling, owing to its specific gravity, remains at the bottom of the water, where the food of the species inhabiting these kinds of houses is mostly to be found; and again, other kinds of caddis are endued with instinct to choose materials that shall be lighter than water, to float on the top that they may seek their food from thence.

When the larvæ have attained their full size, they prepare for the change they are about to undergo, into the pupa state. In the first place, they make their cases secure from being carried away by the stream: this they accomplish by spinning threads from their bodies, and attaching them to the case, and also to some large stone. They likewise secure the mouth of the case from the entrance of insects by a beautiful net-work of these threads, the meshes of which are sufficiently close to exclude extraneous substances, but yet allow a free passage to water. This grating, or net-work, consists of a small, thickish, circular lamina, of brown silk, becoming as hard as gum, which exactly fits the aperture of the case, and is fixed a little within the margin. It is pierced all over with holes disposed in concentric circles, and separated by ridges which go from the centre to the circumference, but often not quite so regularly as the radii of a circle, or the spokes of a wheel. These radii are traversed again by other ridges, which follow the direction of the circles of holes; so that the two kinds of ridges crossing each other form compartments, in the centre of each of which is a hole. When the larva sheds its skin, it appears for a time as a quiescent pupa, inclosed in a distinct case: the head, however, is furnished with a pair of curved mandibles, which appear to serve no other use than that of making a

passage through the open-work grating of silk at the time the insect is about to assume its perfect state. When this time arrives the insect is endowed with power of motion far greater than are possessed by any other incomplete pupa; so that it not only cuts through the grating of silk, but creeps out of the case, leaves the water, and, throwing off its skin, appears as a caddis-fly.

The character of the tribe of insects to which the different species of caddis-fly belong, are as follows:—the mouth nearly obsolete, the mandibles being either entirely wanting, or minute and membranous, as are also the under jaws and lips; the palpi are however present, the posterior wings are generally larger than the superior, and folded longitudinally when at rest; the eyes are prominent and globular; the legs are long and slender. The whole insect is of a small or moderate size, and generally of an obscure pale brownish colour. The different species are found flying, chiefly after sunset, about streams, ponds, &c., and are very similar to each other in general appearance. Like the may-flies, these insects appear in successional groups, and though they are commonly called Spring-flies, some of their species are to be seen even in the autumnal season, thus affording food for fishes, birds, &c., all through the Summer months. The most prominent variety of caddis-fly is the *Phryganea grandis*, or stone-fly of anglers. Cotton, the friend and disciple of Walton, gives a description of this insect as follows:—"His body is long and pretty thick, and as broad at the tail almost as in the middle: his colour is a very fine brown ribbed with yellow, and much yellower on the belly than the back: he has two or three whisks also at the tag of his tail, and two little horns upon his head; his wings when full grown are double, and flat down his back, of the same colour, but rather darker than his body, and longer than it, though he makes but little use of them, for you shall rarely see him flying, though often swimming and paddling with several feet he has under his belly, upon the water, without stirring a wing." This fly is much recommended by anglers as a bait both for trout and grayling, but is more successfully used late in the evening than at mid-day. Some of the caddis-flies are remarkable, like certain moths, for their long antennæ, and these are often actively employed when the insects are at rest. These organs have been observed moving about in all directions, as if by their means the fly was exploring everything that occurred in its vicinity. Caddis-flies may be distinguished from the lesser moths by the curiously wrought reticulated structure of their wings, generally destitute of the powdery appearance of the moth; also by their palpi, or feelers, and by the stemmata on the top of their heads.

THE SPRING FLY

FORGET-ME-NOT,

OR MOUSE-EAR-SCORPION-GRASS,

(*Myosotis palustris.*)

THIS beautiful little flower, which enamels the brinks of our rivers with its corollas of celestial blue, has become celebrated by a German tale, full of melancholy romance. It is related, that a young couple, who were on the eve of being united, whilst walking along the banks of the Danube, saw one of these lovely flowers floating on the waves, which seemed ready to carry it away. The affianced bride admired the beauty of the flower, and regretted its destiny, which induced the lover to precipitate himself into the water to secure the flower. He had no sooner done so, than he sank into the flood, but making a last effort, he threw the flower upon the shore, and, at the moment of disappearing, exclaimed: *Vengils micht nicht;* since which time this flower has been made emblematical, and taken the name of "Forget-me-not."

The *Myosotis palustris* is seen nowhere in greater perfection and abundance, than on the banks of a stream in the environs of Luxembourg, which is known by the name of the Fairies' Bath, or the Cascade of the Enchanted Oak. The romantic banks of this stream are covered with these pretty blue flowers, from the beginning of July until the end of August, and being reflected in the pure waters, appear more numerous than they really are. To this favourite spot the young girls often descend from the ramparts of the town to spend the leisure hours of their holidays in dancing on the borders of this stream, where they are seen covered with the flowers which the waters afford them. The stream is called the Cascade of the Enchanted Oak, from the circumstance of the spring's escaping, with a murmuring noise, from the root of an oak, of great antiquity.

For some years past this little flower has been cultivated in France with the greatest care, and when sent to the Parisian markets, it finds a more ready sale than any exotic plant. The pots being filled with young cuttings, that readily take root and blossom, present such a mass of these delicate little flowers, as must surprise those who have not seen them thus treated.

The generic name of this plant is derived from that given it by the ancients, who called it Mouse-ear, from the form of the leaves; and the French, on the same account, call it *Oreille de Rat*, Rat's-ear. It frequently flowers in May, and continues to give out a succession of blossoms until the end of August. It is increased by separating the roots, and planting them in a moist but free earth; and when planted thickly on the banks or borders of streams or ornamental lakes, it is seen to peculiar advantage. When cultivated in pots, it should be shaded until the slips have taken fresh root; after which the pots should be placed in an open and free air, giving them water when the weather is dry. When in blossom, they may be taken into the house, where these elegant little blue flowers, with their bright yellow eye, cannot fail to attract all the admirers of nature's charms.

We earnestly recommend the cultivation of this little beauty, and particularly so to those cottagers who live near towns, as, by transplanting the trailing branches from their borders into small pots, they would find it profitable to send them to market; for few people would withstand the temptation of purchasing these alluring flowers.

In the Netherlands, it is common to make a syrup of the juice of the myosotis; which is given as a remedy against consumptive coughs.

[PHILLIPS' *Flora Historica.*]

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THE

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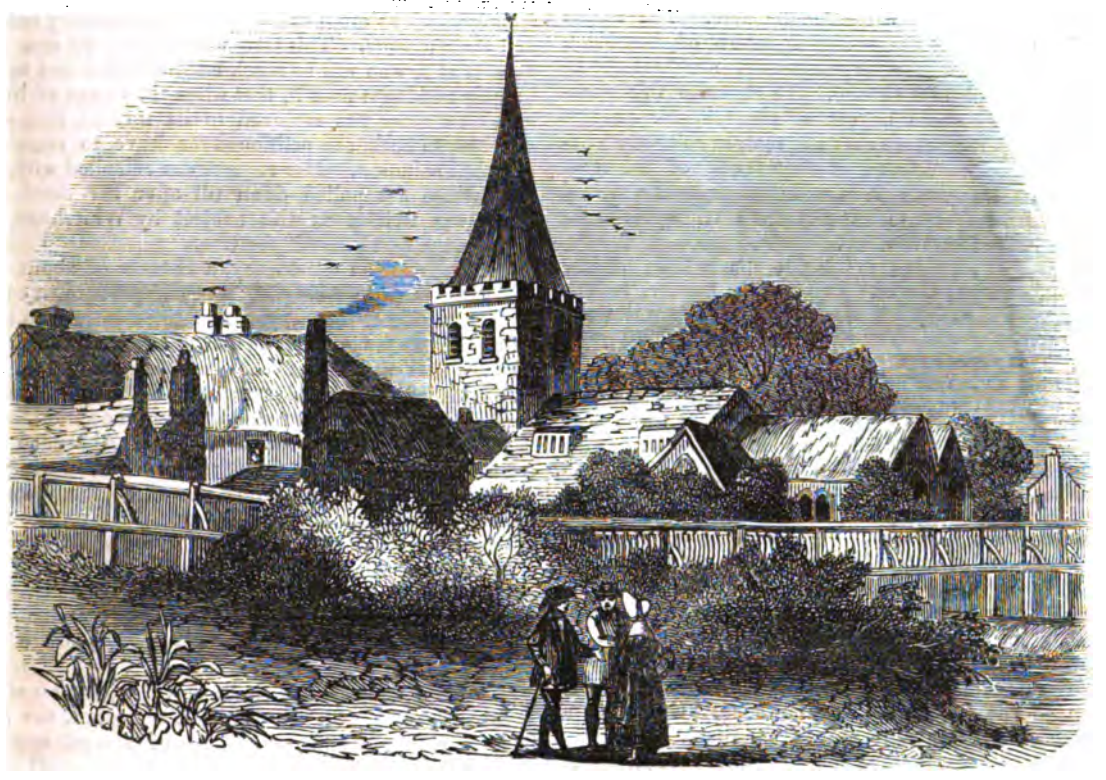
THE BANKS OF THE THAMES. II.



VIEW OF GREAT MARLOW.

Oft in her glass the musing shepherd spies,
The headlong mountains and the downward skies,
The watery landscape of the pendant woods,
And absent trees that tremble in the floods:
In the clear azure gleam the flocks are seen,
And floating forests paint the waves with green,
Through the fair scene roll slow the lingering streams,
Then foaming pour along, and rush into the Thames.

POPE.

In our first article on this subject, we conducted the reader to a part of the Thames nearly parallel with the ancient town of Woodstock, and the magnificent seat of Blenheim;—the one carrying us back, in imagination, to the days of the Edwards and Henrys, and the other to the times of Queen Anne.

The town of Woodstock, considered in a commercial point of view, is not of much note; but the records of English history make frequent mention of it. It is said that Woodstock Park was a royal residence as early as the time of King Alfred, and that this monarch resided there while translating Boetius. Camden states, that in the time of King Ethelred, father of Edward the Confessor, it was so considerable a place, that he there held a convention of the states, and enacted several statutes. The park is supposed to have been enclosed by a stone wall in the time of Henry the First; and in the reign of Henry the Second, Woodstock was the scene of Fair Rosamond's brief but eventful history. The story of this maiden, of the monarch's affection for her, and of Queen Eleanor's revenge, have been woven into a kind of romantic legend, the truth of which cannot now be determined; but it is probable that, like the story of Joan of Arc, the maid of Orleans, the groundwork is correct, but the details have been highly coloured during the lapse of time. Be that as it may, of the bower and the mazy labyrinth, furnishing the scene of the story, no vestiges now remain. It has been asked—

What art can trace the visionary scenes,
The flowery groves and everlasting green,
The babbling sounds that mimic Echo plays,
The fairy shade and its eternal maze?

In Woodstock Park, Geoffry Chaucer, the "father of English poetry," is said to have been born in the early part of the fourteenth century; and to have resided there a considerable time, in a house near the area before the grand entrance to the palace.

Here he dwelt—
For many a cheerful day these ancient walls
Have often heard him, while his legends blithe
He sang, of love, or knighthood, or the wiles
Of homely life, through each estate and age,
The fashions and the follies of the world
With cunning hand pourtraying.

Woodstock Palace, two centuries afterwards, was the scene of the imprisonment of Elizabeth, during the reign of her unnatural sister Queen Mary, and it is said that the royal prisoner wrote the following lines, with charcoal, on the window-shutter of her apartment;—

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Oh, Fortune! how thy restless wavering state
Hath fraught with cares thy troubled witt,
Witness this present prisoner, whither Fate
Could bear me, and the joys I quit.
Thou causedst the guilty to be losed
From bands wherein are innocents inclosed,
Causing the guiltless to be straites reserved,
And freeing those that death well deserved;
But by her malice nothing can be wroughte,
So God send to my foes all they have thoughte.

Anno Dom. 1555. ELIZABETH, prisoner.

In the reign of Queen Anne, Woodstock Manor, together with the dilapidated palace, were granted to the Duke of Marlborough, as an acknowledgment for his brilliant services in the continental wars. The nation also built for him the splendid palace of Blenheim, named after a village in Germany, near which he had gained a splendid victory. To describe this mansion at length, would be out of place in our present course of papers; but we may say that, in spite of numerous architectural defects, it forms one of the most magnificent residences in the kingdom. The grand entrance from Woodstock is through a triumphal arch; and Mr Ireland says:—

It is from this distance the stately pile is most happily viewed; its various towers, rising into the horizon, beautifully break the massy and more ponderous form it wears on a nearer approach. The verdure of the swelling lawn on which it stands, the spacious and easy slope inclining towards the rich valley below, aided by a fine expanse of water, wearing the appearance of a noble river, terminated by a spacious stone bridge, (the centre arch of which is of superior dimensions to the famed Rialto at Venice, being a hundred and one feet,) with a happy assemblage of rich groves and plantations in the distance, form a beautiful *coup d'œil*, surpassing anything I remember to have seen in this or any other country.

The expanse of water, here alluded to, was artificially formed; and Brown, the landscape-gardener who planned it, was so proud of its beauty, that he was wont to say, "that the Thames would never forgive him for what he had done at Blenheim."

We must now leave Woodstock and Blenheim, and return to the Thames, which flows past Oxford at a distance of eight or nine miles from Blenheim Palace. If we were unable to enter minutely into the details of this noble building, how much less can we do justice to this seat of education, with its numerous colleges and halls, and the associations with which it is so intimately connected, and by which we can trace back its existence for more than a thousand years.

Oxford is situated at the confluence of the Isis and the Charwell, the latter of which rivers flows southward through Oxfordshire to the point of junction with the former. The united streams wind their way through verdant scenery to the village of Iffey, about a mile and a half below the city. This village is situated on a beautiful eminence, commanding a distant prospect which includes almost every building in the university.

The river now flows almost directly southward, from Oxford to Nuneham Courtenay, a distance of about six miles; and, at the last-mentioned spot, we meet with the seat of the Earl of Harcourt, the representative of a very ancient family. The heiress of this manor married, in 1214, Robert de Courtenay, baron of Okehampton, and the manor thence acquired the name of Nuneham Courtenay. The estate afterwards came into various hands, until it finally became the property of the Earl of Harcourt. Of the ground surrounding the house, Mr. Brewer remarks:—

The park contains nearly twelve hundred acres, and vinces, in every division, great richness of natural circumstance, improved by the hand of reverential rather than of presumptuous art. Perhaps the talent of Brown*, who assisted in the arrangement of the grounds, was never displayed to greater advantage. Each artifice to heighten pictorial effect is so judiciously concealed, that the whole seems graceful in the simplicity of nature, though no superabundance obstructs the wishes of refined taste. From various points are obtained views of the Witenham hills, of a part of Buckinghamshire, and the high elevations above the vale of White Horse. A drive is formed which conducts to the chief objects of interest in the park, and continues through a wood that falls with a steep descent to the river Isis, the bank of which is here very abruptly and finely broken by steep and bold projections.

* This individual was a celebrated landscape gardener, employed in the early part of the last century in laying out the grounds belonging to many distinguished English mansions.

In the grounds of Nuneham Courtenay, is a tree known to the country people by the name of *Bab's tree*, the history of which marks the kind and considerate feeling which so often exists between the country nobility and their tenants. This tree was planted by one Barbara Wyatt, who was so much attached to it and to her humble residence near it, that when the village of Nuneham Courtenay was removed to its present site, some generations back, she petitioned for leave to remain in her old habitation. Her request was complied with, and her cottage not pulled down till after her death. A poem was written on this subject by Whitehead, and placed on a seat beneath the tree.

From Nuneham Courtenay, a distance of about four miles brings us to Abingdon, a considerable town on the Berkshire side of the river. This town is said to trace its records as far back as the time of the ancient Britons, when it was a town of considerable importance, and distinguished as a royal residence, whither the people resorted to assist at the great councils of the nation. We next learn, that it acquired the name of Abbendon (the town of the Abbey,) on the removal hither, in the year 680, of a monastic institution, to which the town belonged. Abingdon afterwards became a favourite residence of some of the Saxon monarchs; and William the Conqueror placed his son Henry under the care of the monks of the abbey, for his education. The subsequent history of the town was of that fluctuating character, which so frequently resulted from the politics of the period; but we need not trace it further.

Abingdon is pleasantly situated at the junction of the small river Ock with the Thames, or, rather, the Isis: it is handsomely built, consisting of several spacious streets, diverging from a central market-place; well paved and lighted, and amply supplied with water. The manufacture of woollens, formerly carried on here to a great extent, has quite declined. Malting is now the principal business, and, together with the dressing of hemp, and the making of sacking and sail-cloth, constitute the chief employment of the labouring classes. The number of inhabitants is between five and six thousand.

King Henry the Fifth, about the beginning of the fifteenth century, built two bridges over the Thames near Abingdon, at Culham and at Burford; and these bridges added much to the commercial importance of the town. Ashmole gives a translation of some Latin lines relating to these bridges:—

King Henry the Fifth, in the fifth of his reign,
At Burford and Culham did bridges build twain;
Between these two places, but from Abingdon most,
The king's highways now may be easily past;
In one thousand four hundred, and ten more by six,
This so pious work did his Majesty fix;
Ye passengers now who shall travel this way,
Be sure that you mind for the founder to pray.

The following appears to relate to one of the bridges, but is in English of a more ancient date:—

King Henry the Fifte, in his fourth yere,
He hath y'found for his folke a bridge in Berkeshure,
For cartis with cariage may goo and come clere,
That many wynters afore were marred in the mire.
And som ouk of her sadels fleete to the grounde
Went forthe in the water wist no man whare.
Five wekys after, or, they were y'founde,
Her kyn and her knowlech caught hem up with care.

The appearance which the river presents depends a good deal on the proximity of considerable towns. In the open country, where green fields descend nearly to the water's edge, and country residences are seen at a distance, many picturesque and beautiful scenes present themselves, which have often formed studies for the landscape painter. In those parts, on the contrary, where a market town stands on the banks of the river, the Thames voyager sees wharfs and other commercial indications, whereby the thoughts of a miniature London are presented to his mind. Abingdon, Reading, Henley, Great Marlow, and other towns, occur, in this way, at intervals along the route; but it cannot be doubted that the occasional view of commercial industry, alternating with more serene natural objects, give a variety to the scene which greatly enhances its interest. We cannot fully appreciate the beauty of nature's productions, unless we occasionally compare them with the ruder works of man.

WAXEN FRUIT.

HAVING shown in a former article* the method of preparing *artificial-flowers in wax*, we propose here to disclose the usual process of producing FRUIT and other objects in WAX. We must, therefore, speak *first* of the moulds;—*secondly*, of the casting;—and *thirdly*, of the colouring.

1. Before we can proceed to work in making the *moulds*, it is necessary to have the following articles at hand:—a little grease and some superfine plaster of Paris, together with a basin, a spoon, a table-knife, a pot full of damp sand, some thin tinned iron, which must be cut into strips of three inches wide, and some string.

Now, if we wish to make a mould for an apple, for instance, we of course take a real one to mould from. We press down the apple into the damp sand, until nearly one-half of it is buried,—that is, until the sand reaches the thickest part, which, in an apple, is near the middle; and in a pear, near one end. A pear may be inserted sideways; but an apple must not: because the latter would not then *deliver*;—that is, when the upper part is surrounded with the hardened plaster, as it soon will be, it cannot be drawn out, on account of the depression at the stalk and eye of the apple: but, by placing it with the stalk or eye end downwards, this difficulty is avoided. In making moulds of every description, it is necessary above all things to set out with precautions of this nature.

When the apple is nearly half sunk in the sand, bend one of the pieces of tin into a hoop, so as to be an inch or thereabouts larger across than the apple; tie a piece of string round it, and place it over the apple, forcing its lower edge into the sand, so as to hold it firmly. Put water to some plaster of Paris in the basin, so as to make the mixture of the consistence of thick cream;—it will thus run into every minute depression, and completely cover up the half of the apple exposed above the sand, while it will be prevented from flowing away by the rim of tin around.

In a minute or two the plaster will become sufficiently *set*, or hardened, to be handled. When this is the case, remove the tin, and take up the fruit out of the sand altogether, there being now *one* half of the mould cast. This must be trimmed with a knife, for the sake of appearance; and particularly where the sand has touched, cut carefully smooth at the exact half of the fruit; for it will have been observed, that, as the apple was not quite half buried in sand, the part of the mould now cast will be rather more than half, a small part being allowed for cutting away evenly. Now make a hole or two, or a few notches, on one side of the cast, where the other is to join it; grease this part well, holes and all, and tie round it tightly one of the pieces of tin: the fruit will now be in the same position, in respect to the half-mould, as it was when in the sand, except that it is now the other end upwards. Now pour plaster upon this other end, and the mould will be complete, except a little trimming, which it will require. The parts will easily separate at the joining, and, on taking out the real fruit, a cavity will of course be found of the exact size and shape, ready for filling up with wax.

Those fruits which have hard or rough skins, require greasing, to prevent the plaster from sticking to them: this is the case with the peach, apricot, and walnut,—the almond, &c. A few fruits require the mould to be in three pieces,—such as the melon, mulberry, and blackberry. Other fruits are never thus imitated in wax; as grapes, currants, and many more of the smaller kinds, on account of the trouble of joining them together afterwards in bunches.

2. In order to enter upon the process of *casting*, it is necessary to have in readiness several small pipkins, some white wax or spermaceti, a basin of cold water, and the following colours:—the palest chrome yellow, Prussian blue, burnt umber, red lead, flake white, and lake, all in powder, or rather, ground up with oil, as used for painting.

The process of casting all of the larger fruits is the same: but, as we may suppose our apple-mould to have been prepared, we will proceed with the process of casting the wax.

Melt some of the wax slowly over a small fire; and when melted, add a little chrome yellow, and, if we would choose to have a green apple, we must put a very little Prussian blue along with it. While this is going on, the mould should be soaking in the basin of water. When the wax is ready, take the mould out of the water and wipe the inside of it dry with a cloth. Pour the melted wax into it, holding one half of the mould in the hand, until it is nearly full; put the other half mould over in its exact position, which will be indicated by the various notches or holes cut in the sides. Next, hold the two parts tightly together, and turn them over and over, until the melted wax within has spread itself on every part of the inside of the mould. Thus continue it in motion, until the wax is completely set, or congealed, which will be after a minute or two, and may be known to be the case, when, by shaking the mould, no noise of a liquid is heard within. When thus partly hardened, it must be placed for some minutes in the basin of cold water, when most probably the mould will separate of itself; if it does not, very little trouble will suffice to remove it from off the apple, which, as to its casting, is now complete, and will of course be found more or less hollow in proportion to the quantity of wax employed.

In imitating large fruit, the hot air within the mould, having no vent, will sometimes make the wax spurt from the joint: this is to be avoided by holding the filled mould upright a few seconds before turning it about. The edge around the cast fruit where the two sides of the mould joined, must be pared off carefully with a knife. All the foregoing process may be followed up in casting oranges, lemons, eggs, yellow-plums, walnuts, pea-pods, capsicums, &c.

3. In the last-named fruits due regard must of course be had to the variation of *colour*. If the fruit be partly coloured in the process of casting, much care in after painting is requisite.

Suppose we wish to have a red blush on the apple, a little dry lake is taken up with a bit of flannel, and rubbed evenly on the side of the fruit. If a streaked apple be wanted, mix a little lake with spirits of turpentine; then, taking a small quantity in a short-haired, stiff brush, jerk it out of the brush on to the fruit. when it will run down the sides and produce the desired effect. If any peculiar marks are to be imitated, they may be painted with any of the above-named colours, mixed with

* See *Saturday Magazine*, Vol. XVI., p. 204.

mastic varnish. This varnish is also used, when it is desired that the fruit should be very shining, as cherries are: but, if rough-coated fruit be wanted,—as, for example, the peach,—it must be cast as usual, then coloured on one side with dry lake, varnished, and, immediately after varnishing, sifted over with paper powder. The bloom of red plums, and of dark grapes, is made by dusting over them powder-blue from a muslin bag.

Strawberries, cherries, and other small fruit, are always cast solid; that is, after the mould is made, instead of pouring in the wax to the one-half of the mould, and putting the other half on it, a hole is made at the crack between the two halves, and the mould being held upright, wax is poured in, until it is full.

Grapes are formed of glass globes made on purpose; these are of different sizes, and have each a small nozzle or mouth like that of a phial. To fit them up in bunches take some pieces of iron wire; twist a piece of sewing cotton near one end of each wire, so as to fit the mouth of a certain grape; dip it into melted wax, and insert it into the mouth, when it will become fixed there: then dip the grape thus formed into melted wax coloured lightly with green: by taking it out instantly it will dry, having a coat of the wax upon it, which makes it look very much like a real grape. These grapes should be tied together in bunches of about thirty in a bunch. Currants are made with smaller glass globes, but in a similar manner: to give them the peculiar appearance of the opaque lines seen upon them, a piece of sewing cotton is to be wound in sections round the fruit previous to dipping. The remains of the flower at the end of an apple, pear, &c., is imitated by a clove being thrust into the waxen image.

Anatomical preparations, of which many are so complex, and so finely illustrative of morbid anatomy, cutaneous disorders, &c., are all effected according to the directions given for waxen fruit, and coloured, after casting, with common oil colours by precise similar methods. Hence it is, that a consideration of the processes before described, cannot be deemed to be a waste of time.

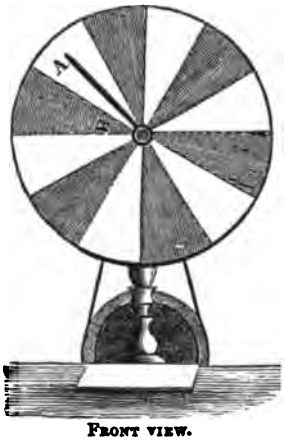
The principal objects manufactured in wax for ornament, are fruits, various articles of pastry, eggs, peas in the pod, capsicums, dolls, miniature busts, flowers, leaves, &c. Miniature busts and wax dolls are coloured with flake white and lake; and they are also much better, if a little Canada balsam be mixed with the wax.

BODILY labour is of two kinds, either that which a man submits to for his livelihood, or that which he undergoes for his pleasure. The latter of them generally changes the name of labour for that of exercise, but differs only from ordinary labour as it rises from another motive. A country life abounds in both these kinds of labour, and for that reason gives a man a greater stock of health, and, consequently, a more perfect enjoyment of himself, than any other way of life. I consider the body as a system of tubes and glands, or, to use a more rustic phrase, a bundle of pipes and strainers, fitted to one another after so wonderful a manner as to make a proper engine for the soul to work with. This description does not only comprehend the bowels, bones, tendons, veins, nerves, and arteries, but every muscle and every ligature, which is a composition of fibres, that are so many imperceptible tubes or pipes interwoven on all sides with invisible glands or strainers.—ADDISON.

HAPPINESS and misery are the names of two extremes, the utmost bounds whereof we know not; but of some degrees of both, we have many lively impressions, by delight on the one side and sorrow on the other, and therefore we may distinguish them by the names of pleasure and pain. Happiness in its full extent, is the utmost pleasure we are capable of, and the lowest degree of it, so much ease from all pain, and so much pleasure, as without which one cannot be content, we therefore judge that whoever is contented is happy.—LOCKE.

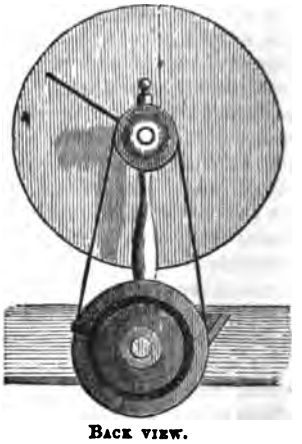
OPTICAL ILLUSIONS. II.

Fig. 1.



FRONT VIEW.

Fig. 2.



BACK VIEW.

WE resume our consideration of those curious phenomena connected with optical science, whereby objects are made to appear under a different form from that which we know they really possess. One remarkable class of such phenomena includes those in which a rapidly rotating body appears to be stationary.

Professor Wheatstone, in the *Philosophical Transactions* for 1834, describes a series of experiments by which it appears probable that the electric fluids in passing through a conducting wire from one side of a charged jar to the other, rush through the conductor with a velocity equal to about 576,000 miles in a second of time. This velocity is so great that the most rapid motion which can be produced by art appears to be actual rest when compared with it. A wheel revolving with celerity sufficient to render its spokes invisible, when illuminated by a flash of lightning, is seen for an instant with all its spokes distinct as if it were at rest; because however rapid the rotation may be, the light has come, and has already ceased before the wheel has had time to turn through a sensible space. Any one who has an electrical machine may perform a similar experiment. Provide a disk, similar to that shown in Fig. 1, the surface of which is divided into black and red spaces. If this disk be connected with a multiplying arrangement, as shown in the same figure, and be rotated rapidly, the black will vanish and the disk appear entirely red; for the black reflects no light, and the reflection proceeds only from the red. If the disk be made to rotate before a Leyden jar in such a manner that it may be viewed by the light of the electric discharge, the black and red spaces become as apparent as when the disk is perfectly stationary. It matters not, of course, what device is painted on the disk, nor how rapidly soever it is turned round; it appears to be quite motionless whenever the electric flash illuminates it. We have performed the experiment during a thunder storm by night, when the broad and distinct flashes of lightning caused a series of rapidly rotating disks to appear quite stationary, to the admiration of those who witnessed this remarkable experiment. These results are better appreciated in a darkened room; but the presence of natural or artificial light does not interfere with their production.

Mr. Tomlinson has found that similar effects can be produced with phosphuretted hydrogen, exhibited in bubbles from phosphuret of lime, in water. These bubbles produce a sudden and transient light, and when they come up slowly without interrupting each other, the light which they shed on the rotating disk causes the latter to appear stationary; but when the bubbles come up too quickly, the black and red spaces exhibit a sort of dancing motion, sometimes two black spaces seeming to be joined into one, to the exclusion of the intervening red, and vice versâ. So also with a disk on which words, such as AT REST, are inscribed; if the bubbles of gas start up regularly and slowly, the words are presented

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to the eye in their proper form; but if too quickly the words seem to cross each other in various directions, and confusion is excited, by a second impression being produced on the retina before preceding impressions have departed. A rapid succession of sparks from a magnet, as also a *stream* of electricity instead of a discharge, will similarly produce confusion in the appearance of the device or inscription.

Any chemical action by which a sudden and transient light is produced, will show similar effects. Soap bubbles, blown with hydrogen or the mixed gases, and fired by means of a filament of cotton passed through a small tube, and wetted with alcohol; gunpowder, wrapped up in the form of a common cracker; fulminate of mercury, struck on an anvil; and many other manipulations, will produce flashes of light fitted for this purpose.

In all these cases, the effect is produced by the following circumstance; that the light comes and goes in a space of time too short for the disk to have rotated through any sensible space. Supposing the disk to be six inches in diameter, and consequently about half a yard in circumference, and that it rotates twenty times in a second, then any point of the circumference will move through $18 \times 20 = 360$ inches in a second. And if we further suppose, for the sake of clearness, that a flash of light, produced in any of the ways explained above, has a duration of only $\frac{1}{3600}$ of a second; then any point in the circumference of the disk will only move through one-tenth of an inch during the existence of the light, a space too small to produce any considerable effect on the apparently stationary position of the disk. Now, small as is this fraction of a second, we know that the real duration of the flashes of light produced as above must be much smaller, for the disk may have a greater velocity given to it than that here supposed: indeed, so far as electrical light is concerned, Professor Wheatstone has shown that its duration cannot be so much as the millionth part of a second!

Mr. Tomlinson has also discovered a very curious and pleasing class of phenomena, (linked in some respects with those given above,) in which a rotating object appears stationary, and at the same time the straight lines occurring in the device appear curved.

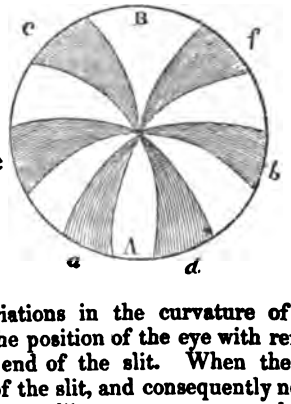
There are two modes in which these experiments may be performed; 1st, Procure a circular disk of pasteboard, twelve or thirteen inches in diameter, and cut a narrow slit in it, extending from the centre nearly to the circumference. Fix this disc to a multiplying machine, and place a lamp behind it. Let the smaller machine, with the painted or written device, be placed in front of the larger, and while both are rotating, the light from the lamp passing through the slit once and only once in each revolution, will fall suddenly and transiently on the coloured disk, producing effects which we shall presently describe. 2nd, Dispense with the lamp, and stand behind the slitted disk; while in front of it, at a distance of two or three feet, place the radiated disk, and cause both to revolve. When the two disks are thus made to rotate, all the radii, excepting those which for the time being are vertical, appear curved,—*upwards* if the eye of the observer is above the axis of the slitted disk, and *downwards* if below. This effect takes place when the two disks are revolving in similar directions. The order will be inverted if the disks move in opposite directions, and a change will likewise take place in the direction of the curvature of the radii, according to the angle at which the eye is placed.

In order to convey to the mind of the reader a clear idea of the effects produced, it will be desirable to give illustrative figures; but here we meet with this difficulty, that the effects produced are different according to the relative sizes of the disks,—their relative velocities,—their respective rotations being in the same or in opposite directions,—the situation of the slit,—and the part of the slit to which the eye is applied. To give a determinate character to the experiments, therefore, it will be better to make a slit in the disk which is the object of experiment, and to view, with the eye placed behind this slit, the image of the rotating figure reflected in a stationary plane mirror, placed in front of the disk, at a distance of about two feet. Thus, by considering the revolving image as a second revolving disk, the following conditions are fulfilled: 1, The two disks are of equal size: 2, They rotate with equal velocities: 3, They rotate in the same direction.

With such an apparatus as this many pleasing experiments may be performed, by fixing to the multiplying wheel disks having different devices. One which we have used is such as is represented in the disk, a front view of which is shown in the multiplying wheel at the head of this article. The disk is covered with a star, consisting of six black and six red radial bands, and a slit, A B, occupies nearly a semidiameter in the centre of one of the bands. The eye is placed behind the disk, so that the front of the disk may be seen reflected in the mirror, which occurs once during one revolution of the disk; and if the disk perform more than six revolutions per second, a tolerably uninterrupted view of the image is obtained, on account of the persistence of impressions on the retina.

Under these circumstances the disk assumes the appearance represented in the annexed figure, (Fig. 3,)

Fig. 3.



subject to variations in the curvature of each radius, according to the position of the eye with reference to the inner or outer end of the slit. When the eye is near the inner end of the slit, and consequently near the centre of the disk, the radii appear congregated much nearer the point A, while at and about B the interval between the two upper radii is greatly increased, but if the eye be held near the outer end of the slit, the radii appear less curved, and their distribution more equable. But at whatever part of the slit the eye be applied, this rule is constant,—that the point A, towards which the curves tend, is seen at the axial end of the slit, in consequence of the slit being only at one side of the axis, and the radial band occupying that position is of the same colour as that which contains the slit. If, however, the slit, instead of occupying the centre of one radial band, be on a line of division between two bands, a line of division will occupy the central position which in the former case was occupied by a band, and, in the latter case, the bands *a b c*, will be opposite in colour to *d e f*, as shown in the figure.

In another paper we shall show other curious effects produced on disks of various kinds.

As it is not enough for a man to have a diamond unless it is polished and cut out into its due angles, and a foil be set underneath, whereby it may the better transmit and vibrate its native lustre and rays; so it will not be sufficient for a man to have a great understanding in all matters, unless the said understanding be not only polished and clear, but underset, and holpen a little with those figures, tropes, and colours, which rhetoric affords, where there is use of persuasion.—Lord Herbert.

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ENCAUSTIC PAINTING.

THAT the ancients excelled the moderns in certain artistical pursuits, and that they were adepts in processes now lost, or imperfectly known, seems generally admitted. Among such pursuits, we may reckon the art of ENCAUSTIC PAINTING, which seems to have been completely lost during several ages between the time of Pliny and the eighteenth century.

The art of painting *in encaustic* is a manner of painting which is executed by the operation of fire. Ancient authors often make mention of this species of painting, which if it had been described simply by the word "encaustic," which, signifies *executed by fire*, might be supposed to have been a sort of *enamel*-painting. But, in the kind of painting which we are considering, wax was employed to give a gloss to the colours, and permanence to the work: these colours were fixed by fire, and preserved by means of the wax from being injured by the air. This mode of perpetuating colours in all their original splendour by heated or burnt wax, was practised in the fourth and fifth centuries, and is *said* to have been in use at Venice even to the time of Titian. By one writer we are told that various specimens of ancient encaustic painting have been preserved in the East: while another says that we have no ancient pictures of this description: but the questions here probably are,—what *species* of pictures are meant? and beyond what point of time does *antiquity* refer?

We must not, however, omit to notice three species of encaustic painting, described by Pliny, who flourished in the first century of the Christian era:—

1. That in which they used the graver, and painted on ivory or polished wood; for which purpose they drew the outlines on a piece of this wood or ivory, previously soaked or imbued with some certain colour: the point of the style or graver served for this operation, and the broad end to scrape off the small filaments that rose from the outlines; and they continued forming outlines with the point, till they were finished.

2. It seems, in this case, that the wax was previously impregnated with colour, and spread over the surface of the picture with the style; the colours thus prepared being formed into small cylinders for use. By the side of the painter was a brazier for keeping the styles continually hot, with the points of which they laid on the colours when the outlines were finished, and then spread them smooth with the broad end; and thus they proceeded till the picture was finished.

3. This process was by painting with a pencil in wax liquefied by fire: by this method the colours contained a considerable hardness, and could not be damaged either by the heat of the sun, or the action of sea-water. It was thus that they painted their ships with emblems and other pictures; and therefore it obtained the name of *ship-painting*. The last process was to smooth and polish the picture.

The first persons of modern times who made experiments in this branch of art were Count Caylus and M. Bachelier. The former is spoken of in the letters of Lady Mary W. Montagu. These experiments were begun to be made about the year 1749. Some years after, Count Caylus presented to the Academy of Painting at Paris, his ideas and experiments on the subject of the ancient manner of painting in encaustic. In 1754 the count had a head of Minerva painted by M. Vien, after the process described by himself, and presented it to the Academy of Sciences in the following year. This success induced M. Bachelier to recommence his experiments, in which he succeeded better than before: but his manner of painting in encaustic differed from that of the ancients, as described by Pliny; and, therefore, he was unsuccessful, inasmuch as he did not discover the *real* ancient mode as used in all particulars for producing the desired effects. After this he made some other experiments on the same subject, differing from the process as described by Caylus and others.

The process pursued by M. Bachelier for performing the operation of *inustion*, or burning in, which is the main characteristic of the encaustic painting, was as follows:—The cloth or wood designed for the basis of the picture, is waxed over, by merely rubbing it with a piece of bees' wax; the wood or cloth is stretched on a frame, and held before a fire, at such a distance that the wax may gradually melt, while it is rubbed on, diffuse itself, penetrate the body, and fill the interstices of the texture of the cloth, which, when cold, is fit to paint upon. But, as water-colours will not adhere to the wax, the whole picture must first be rubbed over with Spanish chalk or white, and then the colours applied to it: when the picture is dry, it is put near the fire, whereby the wax melts, and absorbs all the colours.

Several improvements in this art were proposed by Mr. J. H. Muntz. When the painting is in cloth, he directs it to be prepared by stretching it on a frame, and rubbing one side several times over with bees' wax, or virgin wax, till it is covered with a coat of considerable thickness. In fine linen this is the only operation necessary, previous to painting; but coarse cloth must be rubbed gently on the unwaxed side with a pumice-stone, to take off all those knots which would prevent the free and accurate working of the pencil. Then the subject is to be painted on the unwaxed side with water-colours; and, when the picture is finished, it must be brought near the fire, that the wax may melt, and fix the colours. This method, however, can only be applied to cloth, paper, or other substances, through which the wax can pass; but in wood, stone, metals, or plaster, the method before described, may be observed.

In the year 1787 Miss Greenland, an amateur of painting, communicated to the Society of Arts the knowledge of this art, which she had acquired during her residence at Florence, and at the same time made a present to the Society of a picture executed by herself, for which she received the honorary reward of a gold pallet. This picture is still preserved in the Society's rooms at the Adelphi, and is worth the attention of the artist. This clever and ingenious lady appears afterwards under the name of Mrs. Hooker, of Rettingdean, in the county of Sussex. The following are her instructions:—

Take an ounce of white wax, and the same weight of gum mastich, powdered. Put the wax in a glazed earthen vessel, over a very slow fire, and when it is quite dissolved, throw in the mastick, a little at a time, stirring the wax continually until the whole quantity of gum is perfectly melted and incorporated: then throw the paste into cold water, and when it is hard take it out of the water, wipe it dry, and beat it in one of Mr. Wedgwood's mortars, observing to pound it first in a linen cloth, to absorb some drops of water that will remain in the paste, and prevent the possibility of reducing it to a powder, which must be so fine as to pass through a thick gauze. It should be pounded in a cold place, and but a little while at a time, as after long beating the friction will in a degree soften the wax and the gum, and instead of their becoming a powder, they will return to a paste. Make strong gum-arabic water, and when you paint take a little of the powder, some colour, and mix them together with the gum-water. Light colours require but a small quantity of the powder, but more of it must be put in proportion to the body and darkness of the colours, and to black there must be almost as much of the powder as colour. Having mixed the colours, and no more than can be used before they get dry, paint with fair water, as is practised in painting with water-colours, a ground on the wood being first painted of some proper colour, prepared in the same manner as is described for the picture; walnut tree and oak are the sorts of wood commonly made use of in Italy for this purpose. The painting should be very highly finished, otherwise, when varnished, the tints will not appear united. When the painting is quite dry, with rather a hard brush, passing it one way, varnish it with white wax, which should be put into an earthen

vessel, and kept melted over a very slow fire till the picture is varnished, taking great care that the wax does not boil. Afterwards hold the picture before the fire, near enough to melt the wax, but not to make it run; and when the varnish is entirely cold and hard, rub it gently with a linen cloth. Should the varnish blister, warm the picture again very slowly, and the bubbles will subside. When the picture is dirty, it need only be washed with cold water.

Nearly all the colours that are used in oil-painting may be employed in the encaustic method, and likewise many which cannot be admitted in oil-painting, as red lead, red orpiment, crystals of verdigris, and red oxide of mercury. The crayons used in this sort of painting are the same as those used in the common way of crayon painting, excepting those that are in their composition too tenacious, and the manner of using them is the same in both cases. Encaustic painting has many peculiar advantages: though the colours have not the natural vanish or shining they acquire with oil, they have all the strength of painting in oil, and all the airiness of water-colours, without partaking of the apparent character or defects of either. They may be viewed in any light and in any situation, without any false glare; the colours are firm, and will bear washing; and a picture, after having been smoked, and then exposed to the dew, becomes as clean as if it had just been painted. In re-touching, the new colours unite with the old ones.

The Chevalier Lorgna has deeply investigated the subject of encaustic painting. He seems to think that the part of the art in which the moderns fail relates to the *wax* used in the process. He thinks that we have never thoroughly known the nature of the Punic wax, which was anciently used, and which, after all, was the essential ingredient of the ancient painting in encaustic. Now Pliny describes the method of preparing this wax, but Lorgna says that the *nitre* which the Roman naturalist speaks of is not the modern nitre, properly so called, but the *natron* of the ancients, or the native salt which is found crystallised in the north of Africa, in Egypt, and in other hot countries, in sands surrounding lakes of salt water: it must not be mistaken for the natron of the new nomenclature of our College of Physicians, which is the new name of the mineral alkali.

As the thing chiefly regarded in encaustic painting was the securing of permanence and durability by the application of fire, the word "encaustic" has been applied, in a very general sense, to other processes, in which both the material and the mode of applying the heat are entirely different from the ancient materials and modes. The word has been used, not only of wax-painting on earthen vessels, and on works in metal, where gold and silver were inlaid, melted, or laid on, and of everything which was gilt or silvered by fire, which was called *gold* or *silver encaustic*. The moderns have also used the term for painting on porcelain, and working in enamel, and in the same way it was given to the painting on glass in the middle ages, such as is now seen in the windows of Gothic churches. All these have nothing to do with the wax-painting of the ancients.

Many persons have made attempts in this art during the present century. J. G. Walter, in Berlin, and Professor J. Roux, in Heidelberg, have recently given their attention to these wax-paintings, some of which are said to have been successfully executed. Mr. Peter Kraft, at Vienna, has also lately painted several pieces on walls, in which, however, only the warmed ground was covered with wax, and the colours mixed with oil of turpentine laid on it. Montabert's process is said to bear a greater resemblance to encaustic painting, properly so called. The laying on is nearly in the manner just mentioned, but a wax varnish is spread over the colours, and melted in by means of a kind of brazier. A series of paintings has been executed, after his directions, on the walls of the royal palace at Munich, since 1831, but even here, all the difficulties with respect to the durability of the ground and the colours have not been overcome.

Professor Reinagle is said to possess a painting of Cleopatra, executed in encaustic, which is valued at 2000*l*.

THE HORNBEAM, (*Carpinus betulus.*)

THE *Hornbeam* is principally cultivated in Britain as a shrub and underwood, and is excellent for forming tall hedges or screens in nursery grounds or ornamental gardens. It is not commonly found as a timber tree, though it may be reared for this purpose, and will grow to a considerable height. It is a tree of quick growth, and has a glossy verdure which is very pleasing to the eye. Evelyn, speaking of the Hornbeam, says, that the wood is white, tough, and flexible, and that it is useful for mill-work, handles of tools, and various other purposes. He also says that,—

Being planted in small fosses, or trenches, at half a foot interval, and in the single row, it makes the noblest and the stateliest hedges for long walks in gardens, or parks, of any tree whatsoever, whose leaves are deciduous, and forsake their branches in winter; because it grows tall, and so sturdy as not to be wronged by the winds. Besides, it will flourish to the very foot of the stem, and flourishes with a glossie and polished verdure, which is exceeding delightful, of long continuance, and of all other of the harder woods, the speediest grower; maintaining a slender upright stem, which does not come to be bare and sticky in many years.

Boutcher, of Edinburgh, in his work on trees, minutely details the best mode of cultivating and propagating this tree, when intended to form a hedge. The common Hornbeam should be propagated by seeds, which, being ripe in Autumn, ought first to be spread in a loft till dry, and then mixed with sand till the following spring. They may then be sown thin on beds of fresh earth, three and a half feet broad, with paths or alleys eighteen inches wide between the beds; and covered three quarters of an inch deep with mould. These seeds will remain a year in the ground before the plants appear; during which time the earth must be kept clean. In the following February the surface of the beds should be loosened with a short-toothed rake, so as not to disturb the seeds, and a gentle covering of fresh mould thrown over them: in this state they may remain for two years, if not too thick; since the plants make slow progress the first season, and are naturally well rooted.

From the seed bed they are to be removed, about the month of October, into any fresh spot of ground, even of indifferent quality; the superfluous roots are then to be reduced, cutting away such as cross one another; and after this they are to be planted in rows, two feet and a half asunder, and a foot distance in the row. Thus they are to remain three years, digging the ground, between the rows, annually. By this time the plants will be in a fit state for hedges, in a spot where immediate shelter is required, or to be mixed with other young trees to form woods.

But if they are required for a hedge which is to form an ornamental boundary or enclosure, a different plan must be adopted. If the hedge is to be seven or eight feet high, remove the young plants from the former nursery to another, and place them in rows, the rows being ten feet asunder, and the plants five feet asunder in each row. These should then be trained annually in the regular hedge form, but always observing to keep them light and thin at the top. After remaining in this state about four years they may be taken out, and planted as a hedge at the spot where they are intended to remain: by this time they will have acquired such abundance of roots as to be able to defy the strongest winds; and they will now require no farther expense and trouble than to keep their roots clean for three or four years.

Those straighter plants which may be intended for single trees, may, at raising them from the first nursery, be separated from those for hedges, and planted in rows,

five feet asunder, and two feet distance from each other in the row: these are then to be annually pruned in their proper form, and from hence they may be removed to the places where they are intended to remain, after three or four years' standing. Mr. Boutcher remarks,—

Though I am no advocate for the Hornbeam tree in ornamental plantations, or in generous soils and sheltered situations, yet its being one of the hardiest trees known, the many good qualities of the wood, and the sudden shelter and warmth which hedges formed of it are calculated to afford, appear to give it some claim to our attention, particularly in the cold exposed parts of the country. It will grow surprisingly on the coldest hills, and in the stiffest, barren and otherwise worthless ground; nor do I know any useful timber tree that maintains itself so stoutly against the winds; so that, being of quick growth, and clad in its numerous leaves all the winter, it is certainly one of the fittest plants to nurse and rear up other valuable or delicate trees. This likewise, of all trees yet known, best preserves itself from the bruttings of deer; so that clumps of them, in deer-parks, would be no small improvement, both in point of beauty, and for shelter to these animals.

The Hornbeam affords excellent stakes and posts; and the timber produced by it may be ranked with those of the beech and sycamore. It has been stated by other writers as well as Evelyn, that the wood of the Hornbeam is useful for many manufacturing purposes; but a French writer speaks of it as being too brittle for cabinet work. Its trunk, according to him, is seldom regularly grained, and still more rarely well rounded. The texture of its fibres is singular: its annual layers are not uniformly circular as in most other trees, but assume an undulated or zig-zag form: and its transverse fibres, which pass from the circumference to the centre, have considerable intervals between them; the wood is consequently refractory under the workman's tool, and apt to break into splinters. Its principal superiority is said to consist in its excellences for the purpose of screen fences for sheltering gardens, nursery grounds, plantations, &c., from the severity of bad seasons, &c. It bears cutting in, pruning, and clipping, extremely well; and, from its retaining its leaves during the winter season, becomes particularly close and impenetrable to winds and storms, keeping up a very steady temperature of the atmosphere about the plants which it shelters. On this account, also it is found beneficial to be planted in mixture, or in occasional rows, with many tender sorts of trees in high exposed aspects, in the manner of the birch, to which it is preferable, as affording greater warmth in the winter.

The botanical characteristics of the common Hornbeam are chiefly these:—*Trunk* tolerably straight, but often imperfectly cylindrical:—*Bark* even, whitish, marked with grey spots; branches numerous:—*Leaves* about three inches long and two broad, alternate, petioled, ovate, acuminate, doubly serrated, smooth, wrinkled above, with straight and parallel veins below, remaining on the tree in a withered state during the whole winter. *Male catkins* about an inch long, lateral, solitary, appearing in Spring a little before the leaves; scales ferruginous, concave, ciliated. *Female catkins* terminal, solitary, peduncled, loose; scales green, smooth, with three lanceolate lobes, of which the middle one is largest; *nut* small, ovate, lenticuarly compressed, striated, with longitudinal, filiform ribs; crowned with six, or, according to Scopoli, four teeth, seated at the bottom of the permanent enlarged scale. Our cut represents that part of the plant connected with the flower, such as the male and female catkins (flower sheaths), &c.

Mr. Gilpin, who was accustomed to view trees with an eye always in search of the picturesque, did not think that the Hornbeam had much in its natural form to excite pleasing ideas; but he adds that still, as a botanical antiquary, he could not look upon it without a certain degree of pleasure, when he remembered that our ancestors used it for producing an artifical climate around their ancient castles, by planting it in long lines, and trimming it into vegetable walls of the most mathematical exactitude.

I WOULD advise all the professors of the art of story-telling, never to tell stories, but as they seem to grow out of the subject-matter of the conversation, or as they serve to illustrate, or enliven it. Stories, that are very common, are generally irksome; but may be aptly introduced, provided they be only hinted at, and mentioned by way of allusion. Those that are altogether new, should never be ushered in, without a short and pertinent character of the chief persons concerned; because by that means, you make the company acquainted with them; and it is a certain rule, that slight and trivial accounts of those who are familiar to us, administer more mirth than the brightest points of wit in unknown characters. A little circumstance in the complexion or dress of the man you are talking of, sets his image before the hearer, if it be chosen aptly for the story.—STEELE.

AN obstinate man does not hold opinions, but they hold him; for when he is once possessed with an error, it is like a devil, only cast out with great difficulty. Whatsoever he lays hold on, like a drowning man, he never loses, though it do but help to sink him the sooner. His ignorance is abrupt and inaccessible, impregnable both by art and nature, and will hold out to the last, though it has nothing but rubbish to defend. It is as dark as pitch, and sticks as fast to anything it lays hold on. His scull is so thick, that it is proof against any reason, and never cracks but on the wrong side, just opposite to that against which the impression is made, which surgeons say does happen very frequently. The slighter and more inconsistent his opinions are, the faster he holds them, otherwise they would fall asunder of themselves: for opinions that are false ought to be held with more strictness and assurance than those that are true, otherwise they will be apt to betray their owners before they are aware. He delights most of all to differ in things indifferent, no matter how frivolous they are, they are weighty enough in proportion to his weak judgment; and he will rather suffer self-martyrdom than part with the least scruple of his freehold; for it is impossible to dye his dark ignorance into a lighter colour. He is resolved to understand no man's reason but his own, because he finds no man can understand his but himself. His wits are like a sack, which the French proverb says is tied faster before it is full than when it is; and his opinions are like plants that grow upon rocks, that stick fast though they have no rooting. His understanding is hardened like Pharaoh's heart, and is proof against all sorts of judgments whatsoever.—BUTLER.

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THE

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No. 575. JUNE 19TH, 1841. {PRICE ONE PENNY.

THE BANKS OF THE THAMES. III.

THE VILLAGE OF BRAY.

Man is a glass, life is as water weakly walled about,
Sin brought in Death, Death breaks the glass, so runs this water out.

Such is the quaint and not inapplicable inscription which is placed beneath a figure of Death, in the church of Long Wittenham, where we resume our Thames journey. This little village is situated three or four miles from Abingdon, on the London side; and from that point the river takes a sudden bend towards the north-west, in the direction of the village of Clifton, in Oxfordshire. From thence, another bend leads the river between Little Wittenham in Berkshire and the village of Dorchester in Oxfordshire; near which latter village the river Thame joins the Isis, and with it forms the future Thames.

Of this tributary, the Thame, Dr. Plot said:—

The banks of the Thame are so well sated with some kind of acid, that no well water in the whole town of the name (meaning the town of Thame in Oxfordshire, through which it flows) will either brew or lather with soap*. But none of these give a tincture so high that they can be perceived by the most exquisite palate, but only so far forth as may conduce to a due fermentation, and to keep them living; and yet without doubt, from hence it is that the Thame's water, at sea, in eight months' time acquires so spirituous and active a quality that upon opening some of the casks, and holding the candle near the bung-hole, the steams have taken fire like spirit of wine, and sometimes endangered firing the ship.

Some portion of these remarks are corroborated by later experience; but there seems little doubt that the case is greatly overrated.

* For the *acid* spoken of by Dr. Plot we must probably read carbonate or sulphate of lime in solution.

Much discussion has taken place respecting the propriety of applying the name Thames to that part only of the river which is below the junction with the Thame. Mr. Brewer states that in several Saxon documents still existing, the name of Thames is applied to the river far above the point of junction here alluded to, and that the term Isis for the higher parts of the river is a modern innovation. This question, however, is merely a nominal one, and need not demand our further notice.

From the point where the Thame joins the Isis, till we arrive at the town of Wallingford, the voyager down the Thames meets with a succession of beautiful scenery; the easy sloping hills on the Berkshire side are crowned with a variegated combination of sylvan objects; while an occasional break in the chalky cliff gives a strikingly diversified character to the view. Wallingford, which is about ten miles from Abingdon, is an ancient town. It was originally a Roman fortification; and passed successively into the hands of the Saxons and the Danes, after which it became a royal prescriptive borough in the reign of Edward the Confessor. The Castle of Wallingford, to which the town owes its origin, became in after ages the scene of many important events; but during the wars of the Commonwealth it was completely demolished. The town is situated on the road between Reading and Oxford, and has a remarkably neat and clean appearance. It consists, principally, of two streets, well-paved and lighted. Of the old bridge, which stood when Mr. Ireland wrote, he says:—"The antiquity of the bridge, from its appearance, seems to vie with the oldest structure of the kind on the Thames; it is truly gothic, and of immense strength. The pointed angular

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sterlings on the upper side are so well constructed, as to be capable of resisting the most violent torrent of water from the winter floods." Since that time, however, a very elegant stone bridge has been built across the Thames at Wallingford. Among the natives of Wallingford was Richard, abbot of the monastery which formerly existed here; he was the inventor of a curious clock, which, according to Leland, represented not only the course of the sun, moon, and principal stars, but also the ebbing and flowing of the sea. This machine, the most ingenious of its kind at that time in England, he presented to the Abbey church.

Mr. Brayley some years ago described a farm, situated two or three miles from the river, near Wallingford, as having once been reputed the largest and most compact in England. It was called Cholsey farm, and had belonged to the Abbot of Reading before the dissolution of monasteries. The great barn, wherein he is said to have deposited his tithes, measured three hundred feet long by fifty or sixty in breadth. The roof was supported by seventeen pillars on each side, each pillar about four feet in diameter. These pillars elevated the roof to a great height in the centre; but it descended gradually towards the walls, which were not more than eight feet in height.

The river presents many beautiful prospects while passing between Berkshire and Oxfordshire. Pope speaks of many of the tributary streams here poured into the Thames, in the following lines:—

From his cosy bed
Old Father *Thames* advanced his rev'rend head;
His tresses dropped with dews, and o'er the stream
His shining horns diffused a golden gleam:
Graved on his urn appeared the moon, that guides
His swelling waters, and alternate tides;
The figured streams, in waves of silver rolled,
And on her banks Augusta, robed in gold;
Around his throne the sea-born brothers stood,
Who swell with tributary urns his flood:
First, the famed authors of his ancient name,
The winding *Isis*, and the fruitful *Thame*,
The *Kennet* swift, for silver eels renowned;
The *Loddon* slow, with verdant alders crowned;
Cole, whose dark streams his flowery islands lave;
And chalky *Wey*, that rolls a milky wave;
The blue transparent *Vandalis* appears;
The gulfy *Lea* his sedgy tresses rears;
And sullen *Mole*, that hides his diving flood;
And silent *Darent*, stained with Danish blood.

From Wallingford, proceeding in our course down the river, we come first to Brightwell, not far distant from that town; then to Mongewell, a pretty spot on the Oxfordshire side of the river; then to the village of Moulsford, backed by the hills of Oxfordshire; and soon after to the village of Goring, "whose romantic and sequestered situation," it has been observed, "it is not possible for the eye of observation to pass unnoticed: the Berkshire hills form a rich variegated back-ground, and the easy ascent of the lawns in front happily intersect the principal objects, and give a charming relief to the whole." Opposite to this village, on the Berkshire side of the river, we meet with the village of Streatly, and further on, those of Basselden and Pangbourn, near which latter place the river widens considerably, and is much frequented by anglers, "who occasionally find equal cause for an exertion of their patience and of their skill."

Several other pretty villages occur, on both banks of the river, until at length we arrive at Reading, the principal town in Berkshire. This town is supposed by Camden to have derived its name from the great quantities of *fern* that grew in the neighbourhood, the ancient name of which was redyng. All writers agree, that this is a very ancient town, although they do not agree as to who was its founder. It appears to have been held in succession by the Saxons and the Danes, and to have been the seat of a nunnery, established by Elfrida, mother-in-law of Edward the Martyr. An abbey, afterwards very celebrated, was founded here by Henry the First, for the maintenance of two hundred Benedictine monks, about the year 1120. The abbot and monks were bound, by an obligation in their charter, to provide the poor and all travellers with necessary entertainment; while, on the other hand, they were invested with the power of trying criminals, and with the privilege of exemption for all tolls or customs for the lands which they held.

The abbots are said to have paid rather more attention to their own good living than to the support of the poor; and an odd incident is told by Fuller, as having occurred in the reign of Henry the Eighth. This monarch, having been hunting in Windsor Forest, went down about dinner-time to the abbey of Reading, where, designating himself as one of the king's guard, he was invited to the abbot's table. His appetite, being sharpened by exercise, he fed so heartily from a joint of beef, as to attract the notice of the master of the ceremonies. "Well fare my heart," quoth the abbot, "I would give a hundred pounds if I could feed so heartily on beef as thou dost. Alas! my weak and squeazie stomach will hardly digest the wing of a chicken." The monarch, having appeased his hunger, thanked the abbot for his good cheer, and departed undiscovered. Some weeks afterwards the abbot was arrested, conveyed to London, sent to the Tower, and allowed no food for several days but bread and water. This treatment, together with his fears for the consequence of the king's displeasure, soon reduced his pampered condition; and, at last, when a joint of beef was laid before him, he ate like a famished ploughman. When he had finished his meal, the king, who had been a hidden spectator, broke from his concealment. "My lord," said he, laughing, "presently deposit your hundred pieces of gold, or else no going hence all the days of your life. I have been the physician to cure your squeazie stomach; and now, as I deserve, demand my fee for so doing." The abbot paid this curious physician's fee; glad to obtain his liberty from such an equivocal host as Henry.

Reading is situated on two small eminences, whose gentle declivities fall into a pleasant vale, through which the branches of the river Kennet flow calmly till they unite with the Thames at the extremity of the town. The surrounding country is agreeably diversified with an intermixture of hill and dale, wood and water, and ornamented with a number of elegant seats. The prospect from the Forebury, (a corruption of Fauxbourg,) a beautiful outwork on the north-east side of the town, is very extensive, commanding a fine view over a considerable part of Oxfordshire.

The town of Reading, being the chief place in the county, is too considerable to be described here; and we shall probably devote a separate article to it hereafter. We therefore proceed in our eastward journey along the Thames.

After the confluence of the Kennet with the Thames, a distance of three miles brings us to Sunning Bridge; which is situated near a small but ancient village of that name. Still further on we arrive at the village of Wargrave; a short distance from which is seen the town of Henley, on the Oxfordshire side of the river. This is a clean and cheerful town, situated near the base of a cluster of hills, in one of the most agreeable windings of the Thames. The buildings in the principal street are handsome and capacious, though far from regular. The more ancient tenements, in the several minor avenues which diverge from the great thoroughfare, are mean and incommodious; but the beauty of the situation has induced many private families to erect elegant houses; and a spirit of improvement is manifested everywhere. The church is an irregular Gothic structure, chiefly remarkable for a punning epitaph on Mr. and Mrs. Elme, natives of the town:—

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This *Elme*, in years and worth well growne,
Death at the appointed time *out downe*,
The ivy fades, her propp once gone;
Thus fallne, both lye under this stone.
But lye, afresh to spring, grow, spread,
When every tree shall rise that's dead.

It is well known how fondly every admirer of genius estimates any scrap of writing from the hand of a distinguished man; and it is from such a feeling that Henley preserves the memory of a few lines written by Shenstone. The poet wrote with a diamond, on a pane of glass in a window of the Red Lion Inn, adjoining the Thames, the following lines:—

To thee, fair Freedom! I retire,
From flattery, cards, and dice, and din.
Nor art thou found in mansions higher
Than the low cot or country inn.

One of the most striking objects for which the vicinity of Henley is celebrated, is Park Place, a beautiful seat in the outskirts of the town. The mansion was first the residence of Lord Archibald Hamilton, in the early part of the last century; and, at a subsequent period, it was inhabited by Prince Frederic, the father of King George the Third. Marshal Conway and the Earl of Malmsbury became in succession its proprietors; and each one increased the beauties of a spot which has been deemed one of the finest of the kind in England. It has been said of Park Place, that, "its successive and ever-varying projections, with their intervening valleys, its rich woods, spacious groves, wide-spreading lawns, and bold declivities, are in a style and form which the landscapes that are enlivened and reflected by the Thames do not display in any other part of its course. Nature has done much, nor has taste done less: the genius of the place has everywhere been consulted, and the resulting conformities completed. Marshal Conway seems ever to have had in view the precepts of Pope, who had himself broken from the formality of fashion, and stolen a peep of nature in his garden at Twickenham:—

To build, to plant, whatever you intend
To rear the column or the arch to bend,
To swell the terrace or to sink the grot;
In all, let nature never be forgot.
But treat the goddess like a modest fair,
Nor over-dress, nor leave her wholly bare;
Let not each beauty everywhere be spied,
Where half the skill is decently to hide;
He gains all points who pleasingly confounds,
Surprises, varies, and conceals the bounds.
Consult the genius of the place in all,
That tells the waters or to rise or fall,
Or helps th' ambitious hill the heav'ns to scale.
Or scoops in circling theatres the vale,
Calls in the country, catches op'ning glades,
Joins willing woods, and varies shades from shades;
Now breaks, or now directs th' intending lines,
And in one whole involves the fair designs.

It has been a maxim with me to admit of an easy reconciliation with a person, whose offence proceeded from no depravity of heart; but where I was convinced it did so, to forego, for my own sake, all opportunities of revenge; to forget the persons of my enemies as much as I was able, and to call to remembrance, in their place, the more pleasing idea of my friends. I am convinced that I have derived no small share of happiness from this principle.—SHENSTONE.

In story-telling, besides the marking distinct characters, and selecting pertinent circumstances, it is likewise necessary to leave off in time, and end smartly. So that there is a kind of drama in the forming of a story, and the manner of conducting and pointing it is the same as in an epigram. It is a miserable thing, after one hath raised the expectation of the company by humorous characters, and a pretty conceit, to pursue the matter too far. There is no retreating, and how poor is it for a storyteller to end his relation by saying "that's all!"—STEELE.

OPTICAL ILLUSIONS. III.

Fig. 4.

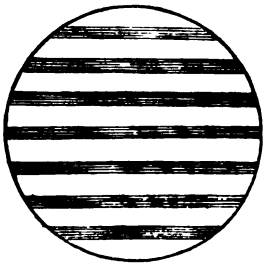
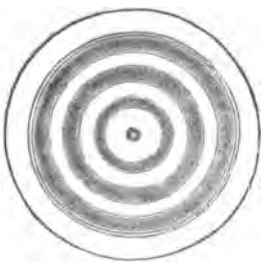


Fig. 5.



In our last paper on this subject, we described several experiments which show, that bodies in rotation may, under certain circumstances, appear to the eye to be stationary, and that by a further modification of the apparatus employed, the straight lines constituting or forming part of that object, may appear as if curved. In illustration of the latter fact, we gave cuts showing the curved forms given to the twelve radii, six red and six black, of which a star-like disk is formed. We now proceed to other figures.

A beautiful but very simple change in the apparent figure of a *striated* disk, is made by merely causing it to revolve, and viewing it in the usual way without reflexion from a mirror. Fig. 4, represents a disk painted in this way with fifteen stripes, eight white and seven black, but of course any two colours would do. If this be made to rotate, it presents the appearance of Fig. 5, in which we have a central white spot, surrounded by six concentric circles, three white and three black. The law which regulates the production of these rings is probably as follows:—Whatever tint predominates at any point of the disk, the rapidity of rotation causes the same tint to appear at every other point equidistant from the centre; and to ascertain what that tint would be, describe a concentric circle through that point, and by adding the dark portions through which it would pass into one series, and the light portions into another, by combining the two aggregates we may ascertain beforehand what number of concentric circles will result. The outlines are, as may be supposed, not clearly defined, but melt into each other.

In the instance represented in our cut, the dark stripes form an odd number, and the proportion of white is greater than that of the black; from which result the production of rings, alternately light and dark. But suppose the proportions of the two colours to be exactly equal, that the disk is poised exactly on its centre, and that it be very carefully rotated without the slightest excentricity of motion,—then the stripes, radii, checquers, or whatever figures occupy the surface of the disk, (except concentric circles,) blend into one uniform tint, midway between the colours of the disk, and entirely free from rings.

From this experiment we may deduce:—

1. That when a disk is so divided, that with any radius, a circle would pass through equal portions of the two colours with which the disk is painted, an universal blending of colour will result:

2. That, if at any part of the disk a balance of colour be not observed at opposite sides of the centre, concentric rings will result:

3. That, as the non-existence of that balance depends upon a definite mode of construction, the number and breadth of the rings can be computed:

4. If the equipoise be disturbed by extraneous causes, such as imperfect division, or excentricity of adjustment, the rings are uncertain, and not easily computed.

It will thus be seen that many pleasing experiments may be made with rotating disks, even when viewed in a common way. We now revert to the use of the reflecting mirror.

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Fig. 6.

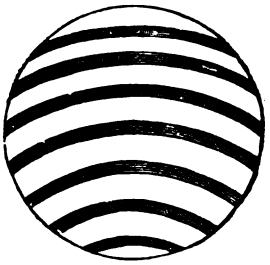


Fig. 7.

When the striated disk spoken of above, is seen by means of the mirror apparatus, it assumes the form of fig. 6. The surface is laid out in curved concentric bands of the greatest symmetry, the number and breadth of which are the same as in the rectilinear striæ. The centre of these concentric segments, which is at the axial end of the slit, is either at or exterior to the edge of the disk, according to the position of the eye. The figure here delineated is produced when the slit cuts the striæ at right angles. When the slit is parallel with the striæ, the figure is totally changed; for the bands appear all rectilinear; but their parallelism to each other is destroyed, as they all seem to diverge from a point situate at the axial end of the slit. When the slit is inclined at an angle of 45° with the striæ, the image presents the shell-like form represented in fig. 7.

Fig. 8

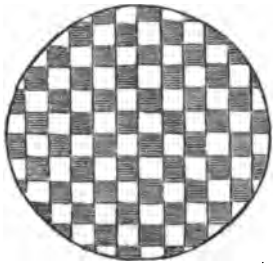
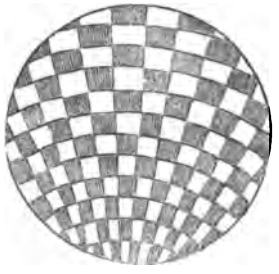


Fig. 9.



c

A little consideration will show that changes similar to these in principle, but modified in detail according to circumstances, would follow from the use of any other symmetrical figure. We shall therefore content ourselves with giving illustrations of one more example. Fig. 8 represents a chequered disk, which, when viewed simply while rotating, presents a series of rings somewhat resembling those in fig. 5, the only difference being a more gentle blending of the tints of the concentric rings; but, when the image is viewed through a slit in the disk, as reflected from the mirror, it presents the appearance of a tesselated globe, the illusion occasioned by which is so perfect, that an effort of the mind is required to preserve the idea of a flat surface. The appearance of the chequers, when viewed through a slit parallel with the rectilinear divisions, is such as is represented in fig. 9; evidently partaking of the character of fig. 6, the difference being due to the division of the striæ into squares. If the slit be inclined 45° from the divisions, all the diverging lines proceeding from c cut the diagonals of the chequers, instead of marking their boundaries.

Every change in the mode of forming the slit in the disk, produces a new modification of figure:—thus,

If the disk be diametrically divided into two halves, exactly alike, and the slit be on the line of division, the figure is altogether unchanged; but, if it be at right angles to that line, the half which contains the slit encroaches on the other half, by giving a curvature to the line of division; thus presenting the gibbous form of a three-quarter moon.

All the figures produced by this mirror apparatus are the same in principle as those produced by two revolving disks, the latter arrangement presenting figures modified in every imaginable way, by one or more of the five conditions before stated. As an instance, we may mention, that, when two disks are rotating with unequal velocities, the nucleus towards which the curves tend, or from which they seem to spring, oscillates to and fro; and the curves themselves vary in their number and respective distances from each other.

The mode in which the phenomena before described, *i.e.*, the stationary appearance of a rapidly rotating disk, was explained, will, with some modifications, apply here. In the former, the light comes and goes before the disk has time to move through any sensible space; but in the experiments where the light of a lamp flashes upon the painted disk through the slitted disk; or where the eye is placed behind the slitted disk, and looks through it at the painted one; or where the eye, placed behind the disk, looks through the slit at the image reflected from the mirror,—the duration of the light is greater than the electric light, or than that from the phosphuretted hydrogen, &c., and the disk *does* pass through a sensible space during that time. Now, as the circumference of the disk necessarily moves quicker than the centre, that is, as the velocity decreases from the circumference to the centre, a particular spot, black for example, seen at one point of the circumference will have moved through several degrees, as the slit passes the eye; while, at or near the centre, the space gone through is scarcely appreciable. This, together with the persistence of impression on the retina, will account for the curvature given to the image of the lines.

An amusing modification of the experiment may be made in the following manner:—In a plain disk, cut a slit radially nearly from the centre to the circumference. Below and at right angles to the slit write in large characters any word or words, such as "LIGHT," in an inverted position, so that when seen in a plane mirror, the reflected image may be erect, and in its natural position. On placing the eye behind the disk, the word will be seen through the slit uninterruptedly, provided the disk perform more than six revolutions per second. In this case, the word is seen in a curved form, which is evidently due to the principle before explained, and the letters are all of the same size. Whereas, if the slit be parallel with the order of the letters, the latter appear gradually to increase in size, from the axis to the outer end of the slit.

In these experiments, the disks should be illuminated by a direct light falling upon them; and their backs, where the eye is placed, should be blackened all over.

I LOOK upon every man as a suicide from the moment he takes the dicebox desperately in his hand, and all that follows in his career from that fatal time is only sharpening the dagger before he strikes it to his heart.—CUMBERLAND.

WHEN I walk in the streets, I use the following natural maxim, (viz., that he is the true possessor of a thing who enjoys it, and not he that owns it without the enjoyment of it,) to convince myself that I have a property in the gay part of all the gilt chariots that I meet, which I regard as amusements designed to delight my eyes, and the imagination of those kind people who sit in them gaily attired only to please me. I have a real, and they only an imaginary pleasure from their exterior embellishments. Upon the same principle, I have discovered that I am the natural proprietor of all the diamond necklaces, the crosses, stars, brocades, and embroidered clothes, which I see on a birth-night, as giving more natural delight to the spectator than to those that wear them. And I look on the beaux and ladies as so many paroquets in an aviary, or tulips in a garden, designed purely for my diversion. A gallery of pictures, a cabinet, or library, that I have free access to, I think my own. In a word, all that I desire is the use of things, let who will have the keeping of them. By which maxim I am grown one of the richest men in Great Britain; with this difference, that I am not a prey to my own cares, or the envy of others.—BERKELEY.

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ON CHESS.

XII. Biographical Sketch of Philidor.

CHESS-PAWN, AS DESIGNED BY FLAXMAN.

The valiant guards, their minds on havoc bent,
Fill the next square, and watch the royal tent:
Though weak their spears, though dwarfish be their height,
Compact they move, the bulwark of the fight.
Sir William Jones.

It has been remarked, as a curious circumstance, that while the talent for playing chess bears no relation to the general talent of the player, yet that every one has an individual maximum of talent for chess, to which, by study and practice he may be brought but beyond which he cannot pass.

This remark ought to be extended to every mental pursuit, for it expresses a principle of our nature, instead of a curious solitary fact. Those whose chief object it is to improve their mental powers, always find delightful occupation in striving after excellence. We are most fortunately denied the power of *fore*seeing how far our faculties will carry us in the cultivation of a particular subject, but by slow degrees we gradually get nearer and nearer to a certain point, beyond which we find we do not advance. Before this point, however, is attained, we can appreciate the powers of the great masters in the thing studied, for doubtless it requires a certain portion of the same faculties to appreciate excellence as to attain it, and if we cannot equal, we are at least qualified, to admire.

The general progress of knowledge is for the most part made by those gifted men who appear at intervals few and far between, and excel all others in the particular pursuit to which their inclination leads them. We look back upon such men with respect and admiration: we desire to know their history,—their modes of study,—their general conduct in the world and in private life,—and we thus fondly imagine that by endeavouring to imitate them we may gain some of the skill for which they were so famed. It would be unwise to check such feelings, but it is necessary that young people should be cautious in the choice of their models: they should remember that the most eminent men, notwithstanding their eminence, have still the errors and weaknesses of our nature, and that these, being often mistaken for the offshoots of genius, are more easily adopted than their better parts, and prove exceedingly injurious to their imitators.

The subject of our present notice is known to us only as a kind, amiable man, who, had he not been the best chess player of his own, and, perhaps, of any other time, would probably have been known as an eminent musician.

André Danican Philidor was born in the year 1726, at Dreux, a small town about forty-five miles from Paris. His grandfather, whose name was Danican, was celebrated as an oboe player at the court of Louis the Thirteenth. An Italian musician named Philidor was admired at that court for his performance on the same instrument; and after his departure the king gave M. Danican the *soubriquet* or nickname of Philidor, which afterwards continued as an appendage to the family name. The father, and several of the brothers of Philidor, belonged to the band of Louis the Fourteenth and Louis the Fifteenth.

At the age of six years Philidor was admitted into the choir of the Chapel Royal at Versailles, where being obliged to attend daily, he had an opportunity of learning chess from the musicians in waiting, of whom there were about eighty. Games of chance not being allowed in the sanctuary, a long table inlaid with six chess-boards was provided, with which they amused themselves during their leisure hours.

In 1737, when Philidor had only completed his eleventh year he produced a motet for a full choir, which so much pleased the *grand monarque* that he gave him five louis, and thanked him for his performance: this encouraged the lad to compose four more motets; but we do not learn that the royal condescension was followed by any more solid acknowledgment; for at the age of fourteen, when his voice began to change, and he quitted the band, we find him submitting to the drudgery of copying music for his subsistence, and giving a few lessons. When he left the chapel he had the reputation of being the most skilful chess player of the whole band. In 1740 several motets of his composition were performed at the famous *concert spirituel*, established by his uncle in 1726, and these were favourably received by the public as the productions of a child, who was already master of music and of chess. At this time Philidor might have established for himself a lucrative practice as teacher of music; but the fascinations of the chequered field caused him to neglect his musical pupils, and they, in consequence, soon procured other more attentive masters. This induced Philidor to pursue the study of chess, rather than that of music. At this time the game was played in almost every coffee-house in Paris. M. de Kermur, sire de Legalle, was then esteemed the best chess player in France, and young Philidor sought every opportunity of receiving his instructions, by which he improved so essentially, that in three years he played as well as his master.

M. de Legalle once asked Philidor whether he had ever tried to play by memory without seeing the board. The pupil replied that he had calculated moves, and even whole games at night in bed, and he thought he could do it. He immediately played a game with the Abbé Chenard, which he won without seeing the board, and without hesitation upon any of the moves. This circumstance was much talked of in Paris, and consequently he often repeated this method of playing.

Finding it so easy to play a single game without seeing the board, he offered to play two games at the same time. This feat he performed in a public coffee-room, and won both games. In the middle of one of the games a false move was designedly made, which after a great number of moves, he discovered, and placed the piece where it ought to have been at first.

In 1745 Philidor went to Holland to join some musical brethren in a scheme for giving concerts to the Dutch; but the death of one of the party terminated the plan, and Philidor found himself alone in a foreign land without means to support himself. His skill in chess and in Polish draughts procured him enough to supply his wants: he gave lessons in chess to the Prince of Waldeck, who then commanded the Dutch army, and after remaining about a year, chiefly at the Hague, he left Holland.

In 1747 he visited England for the first time. The principal London chess club then held its meetings at

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Old Slaughter's coffee-house in St. Martin's Lane. Sir Abraham Janssen was then the best player in England, and with the exception of M. de Legalle, probably the best player Philidor ever encountered. After remaining about a year in England, Philidor returned to Holland, where he composed his celebrated *Analysis of the Game of Chess*. At Aix-la-Chapelle he was advised by Lord Sandwich to visit Eyndhoven, a village between Bois-le-duc and Maestricht, where the British army was encamped. He there had the honour of playing with the Duke of Cumberland, who, not only himself subscribed liberally for a number of copies of the work, but procured many other subscribers. The analysis was published in French, in London, 1749, and has been since reprinted or translated in almost every capital of Europe*.

Philidor frequently played chess at the house of the French ambassador, the Duke of Mirepoix, who gave a weekly dinner to the lovers of the game, at which he himself was expert. The king of Prussia also enjoyed the reputation of being a chess-player, and in 1751 Philidor visited Berlin, by invitation of that monarch, who took great interest in seeing Philidor play, although he did not encounter him himself.

During these chess excursions Philidor did not neglect his musical profession. In 1753 he set to music Congreve's *Ode to Harmony*, which was performed in London. The great Handel was present at the performance, and approved of the chorusses, but thought the melody defective. Two years after he returned to Paris with the intention of devoting himself entirely to his musical profession: he composed some sacred music, and solicited the appointment of *maître de la chapelle*, but as his productions were thought by the Court to savour too much of the Italian style, his application was unsuccessful.

It would be out of place here to follow Philidor through his musical career. Suffice it to say that his compositions comprise more than twenty-five complete operas, some of which were performed with eminent success, besides numerous other musical publications. M. de Laborde, in his voluminous *Essay on Music*, does not hesitate to pronounce Philidor one of the greatest of French composers.

Philidor visited England for the fourth time in 1769. He found chess had now become fashionable: a new club had been formed at the Salopian Coffee House, where he frequently played. Another club was afterwards formed in St. James's Street, next door to the Thatched-house Tavern. The members of the latter club formed a subscription among themselves in order to remunerate Philidor for attending their meetings. The best players in this club, and at that time in London, were Count Bruhl, the Hon. H. Conway afterwards Lord Henry Seymour, Lord Harrowby, Mr. Bowdler, and Mr. Jennings. In playing over the board, the pawn and two moves, or the knight in exchange for the first two moves, were the fair odds between these gentlemen and Philidor†.

The first match played by Philidor in public without seeing the board is recorded in the *Morning Post*, of May 28, 1782. This notice is curious as showing the great sensation occasioned by an exhibition which was then regarded as equally new and wonderful.

The celebrated M. Philidor, whose unrivalled excellence at the game of chess has long been distinguished, invited the members of the chess club, and the amateurs in general of that arduous amusement to be present on Saturday last at a spectacle of the most curious kind, as it was to display a very wonderful faculty of the human mind, which faculty, however, is perhaps at present exclusively his own.

In consequence of this invitation, thirty gentlemen and three ladies attended M. Philidor, at Parsloe's, in St. James's street, where, in their presence, with his eyes closed, he contended with two gentlemen at the same time, who had each a chess-board, and who may be deemed among the first players in Europe next himself. Count Bruhl was his adversary at one board, and Mr. Bowdler at the other, and to each was allowed the first move. The games lasted one hour and forty minutes. The game with the Count was drawn, and Mr. Bowdler won the other, owing to the exact similarity in the openings, for if the two games had less resembled each other, M. Philidor would have preserved a distinct recollection.

The idea of the intellectual labour that was passing in the mind of M. Philidor suggested a painful perception to the spectator, which, however, was quite unnecessary, as *he seldom paused half a minute*, and seemed to undergo little mental fatigue, being somewhat jocose through the whole, and uttering occasionally many diverting pleasantries. The whole passed in the French language.

When the intrinsic difficulty of the game is considered, as well as the great skill of his adversaries, who of course conducted it with the most subtle complications, this exertion seems absolutely miraculous, and certainly deserves to be recorded as a proof, at once interesting and astonishing, of the power of human intelligence.

The periodical called *The World* of the same date, after giving similar details of the match concludes thus:

This brief article is the record of more than sport and fashion: it is a phenomenon in the history of man, and so should be hoarded among the best samples of human memory, till memory shall be no more.

The ability of fixing on the mind the entire plan of two chess-tables, with the multiplied vicissitudes of two-and-thirty pieces in possible employment upon each table, that a man should maintain the two games at once, without seeing either, but merely from the report of move after move upon both; and this contending not with bad and inexperienced play, but with two of the best and most practised players in Europe,—all this makes up a wonder of such magnitude as could not be credited, perhaps would not be credible, without repeated experience of the fact.

This has been had from M. Philidor again and again, but never with more struggle, for his antagonists were Count Bruhl and Mr. Bowdler. They never were more excellent: how much resource there was, and guarded enterprise, may be imagined from the time they took in playing. During the whole of that period the memory of this astonishing man was never for a moment absent nor confused: he made not one mistake.

These wonderful performances procured Philidor more fame than profit; and he himself seems to have been roused to the conviction that his exertions would have been better directed had he acquired a competence for himself and family instead of such unrivalled skill in chess: for we are told that he would never allow any one of his numerous family to learn the game. With a wife and nineteen children entirely dependent upon his labours for support, he found it difficult for many years to procure them more than a very meagre income.

During the latter years of Philidor's life he continued to reside in London in the winter, and with his family at Paris in the summer, occasionally playing matches in public without seeing the board, and generally winning of the best players opposed to him. The following notice appeared in the London newspapers in May, 1783:

Yesterday at the chess-club in St. James's Street, Mr. Philidor performed one of those wonderful exhibitions for which he is so much celebrated. He played three different games at once without seeing either of the tables. His opponents were Count Bruhl, Mr. Bowdler, (the two best players in London) and Mr. Maseres. He defeated Coun. Bruhl in one hour and twenty minutes, and Mr. Maseres in two hours; Mr. Bowdler reduced his game to a drawn battle in an hour and three quarters. To those who understand chess, this exertion of M. Philidor's abilities must appear one of the greatest of which the human memory is

* Philidor brought out a second edition of this work in 1777, with considerable additions. Of the numerous translations of this work into English, the edition by Mr. George Walker is the best.

† Many of the games thus played were preserved in MSS. by the Rev. George Atwood, a pupil of Philidor. These MSS. a few years ago came fortunately into the possession of Mr. George Walker, who has prepared from them a small volume which every amateur ought to possess. It is entitled, "Games at Chess, played by Philidor and his Contemporaries: with Notes and Additions. By George Walker. London, 1836."

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susceptible. He goes through it with astonishing accuracy and often corrects mistakes in those who have the board before them.

Between the years 1788 and 1792 Philidor played eight similar matches, each match consisting, in general, of three games; and in 1792 two such matches were played in the presence of the Turkish ambassador. In 1795 when he was at the age of sixty-nine he played three blindfold matches in public, the last of which was thus announced in the daily papers:

CHESS CLUB, 1795, PARSLOE'S, ST. JAMES'S STREET.—By particular desire, Mons. Philidor, positively for the very last time, will play on Saturday, the 20th of June, at 2 o'clock precisely, three games at once against three good chess-players; two of them without seeing either of the boards, and the third looking over the table. He most respectfully invites all the members of the chess-club to honour him with their presence. Ladies and gentlemen not belonging to the club may be provided with tickets at the above-mentioned house to see the match, at five shillings each.

On Saturday, August 29th, 1795, the following sad intelligence appeared in the daily papers.

MONS. PHILIDOR, THE CHESS-PLAYER.

On Monday last, the 24th of August, this long celebrated foreigner made his last move—into the other world. For two months, he was kept alive merely by art and the kind attentions of an old and worthy friend. To the last moment of his existence he enjoyed, though nearly seventy years of age, a strong and retentive memory, which long rendered him remarkable in the circle of his acquaintance in this capital.

M. Philidor was a member of the chess-club near thirty years, and was a man of those meek qualities that rendered him not less esteemed as a companion, than admired for extraordinary skill in the game of chess, for which he was pre-eminently distinguished.

It is only two months since he played two games blindfold at the same time, against two excellent chess-players, and was declared the victor. He was, besides, an admirable musician and a composer.

What seemed to have shaken the poor old man's constitution, and to have precipitated his exit, was not being able to procure a passport to return to Paris to see his family (who reside there,) before he paid the last debt of nature. This refusal was rendered still more bitter, on its being intimated to him that he was denounced by the blood-thirsty committee of French Revolutionists as a *suspected character*. From the moment he was made acquainted with this circumstance he became a martyr to grief—his philosophy forsook him—his tears were incessant—and he sank into the grave.

We cannot conclude the first part of our course of articles on chess without offering a few remarks to the young player.

While we estimate chess as decidedly the best of games, inasmuch as it gives a wholesome exercise and discipline to the mind, and is, at the same time, a recreation from other pursuits, we must also confess that there was much truth in the remark of James the First that chess is "overwise." When played scientifically it certainly is too absorbing and difficult a subject for mere amusement. Some studious persons find rest and refreshment in a change of pursuit, even though it be from one difficult subject to another equally difficult; but there are few such. We would therefore advise our young readers to restrict themselves in the time they devote to chess, lest this fascinating game become the great object of study and set aside other and more important pursuits. Every age does not produce its Philidor, nor would it generally speaking be a wise application of time and talent to aim at reaching his standard of excellence in this game.

ON THE ORIGIN AND USE OF COUNTERS.

FEW persons at the present day, when they see small flat pieces of metal, resembling coins, and called *counters*, are aware of the purpose to which they were originally employed. They are memorials by which we may measure the advance of arithmetical knowledge among the bulk of the people, in other countries as well as our own. Counters, as the name imports, were intended to assist in *counting*, in a manner which we will endeavour to describe.

Before arithmetic, as a science of the mind, was diffused through the nations of Europe, a kind of tangible arithmetic was employed, in performing the operations of addition and subtraction. In a recent paper on Calculating Machines (*Sat. Mag.*, Vol. XVIII., p. 12.) we have spoken of the Roman abacus and the Chinese schwan-pan, and these are some of the means by which tangible arithmetic was performed. It will be remembered that the Roman abacus was a frame, across which several wires were stretched, and that small beads, strung on these wires, were made the instruments of calculation, according to the relative positions which they occupied. The Chinese schwan-pan and the Russian Shtchota were different varieties of the same instrument.

But it is not difficult to see that the same effect might be produced by drawing lines on a board or table, and placing pebbles, coins, or any small objects, on or between them. This was done, and from thence sprang the custom of using counters. It appears that the Greeks used for this purpose small flat, rounded, polished pebbles, which they called *ψηφοι*, and from which they termed the process in which these were used *ψηφοφορια*: hence arise our terms *cypher* and *cyphering*. When the Romans came to adopt a similar plan, they called the counting pebbles *calculi*, from whence we obtain our terms *calculate*, *calculating*, &c. Many centuries after this, small flat pieces of metal were employed for this purpose instead of pebbles: they appear to have been first used in France, and were called *jettons*, from the verb *jetter*, or *jeter*: to cast or move, in allusion to the lateral or vertical movement which they made on the counting-board: the familiar expression, to *cast up* a sum, or to *cast* an account, is a remnant of the times when these pieces of metal were cast or moved from one line on the casting-board to another. When the Dutch began to adopt this plan they applied the term *leggenning* or *legget* (lay-penny, or lay-money,) to the small pieces of metal, from the verb *leggen*, to lay, in allusion to the laying or placing of them on the counting-board. In Germany the piece of metal acquired the name of *Rechenpfennig*, *reckoning penny*, and lastly in England they were called *counters*, appropriately indicating, as did likewise the German "rechnen," the purpose of counting or reckoning to which they were applied.

It will thus be seen that many terms, more or less familiar to us, have become current through the early use of counters in arithmetical computation.

The reader must bear in mind that these pieces of metal did not assume any particular value in the computation on account of their intrinsic worth as metal, but merely from the position they occupied on or between the lines marked on the board or table used for counting. Here again we have the origin of another term in familiar use: a shop-*counter* was originally the board on which the computations between the buyer and seller were made out; and though this custom has long since become obsolete, yet the word "counter" is still applied in this sense.

The pieces of metal used by the moderns for the purpose of computation were originally circular, flat, well-polished, and quite plain. But afterwards they were adorned with ornaments, devices, and legends, which make them highly curious memorials of past times, for some of them contain the name of the person by whom

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or for whose use they were made,—the sovereign in whose reign they were employed,—or the particular town or corporation to which they belonged. A brief description of some specimens will show the general character of these metallic counters.

For some centuries previous to the reign of Louis the Twelfth counters were struck in France in great numbers, and they are alluded to by various writers under the names of *gects*, *gectz*, *geteors*, *getoirs*, *gettoirs*, *jectoers*, *jectoirs*, *jetoirs*, *giets*, *gietons*, and *gitones*, all of which are evidently derived from the same verb as *jettons*, and are merely different modes of spelling the same term. Some of these jettons, still in existence, bear legends purporting that they were made for the use of such and such a person,—the Seigneur de Berssele, Monsieur le Chancellier, the Prince de Castelle, Monsieur de Berg, &c. Others purport to have been intended for the use of some of the public offices, such as the Bureau de Finances, and many others. Many of them contain legends of an admonitory character, serving as maxims to encourage correct reckoning, such as *Gardez-vous de mescomptes*,—Be on your guard against mis-counting; *Jettez bien, que vous ne perdriez rien*,—Cast well, that you may lose nothing; *Qui bien jettra, le compte trouvera*,—He who casts well will find his account; *Si vous faillez, le recomptez*,—If you fail, count again; *Bon compte ne font à nulle honte*,—Good counting brings shame to no one; *Comptez et jettez justement, craignant le divin jugement*,—Reckon and cast justly, fearing the divine judgment.

A large number of these jettons had legends in Latin, denoting in most cases the persons, cities, or official bodies, for whose use they were struck. Those made in Holland had not so frequently admonitory mottoes, but had such legends as the following;—*Leggelt van der Munters van Holland*,—lay-money for the coiners of Holland;—*Leggelt der Stadt van Brussel*,—lay-money for the city of Brussels. Nuremburg in Germany appears to have been particularly distinguished for the number of jettons, or as we must here term them, *rechenpfennigs*, made there. These contained, in some instances, the arms of the city; in others, the bust of some public character; in others, an allegorical subject; in others, the name of the parties by or for whom they were issued; and in most of them an inscription of some kind or other. On one, of which a representation is now before us, there is "Cornelius Lauffer, in Nurnberg;" and on the other side, *Glückbeschert ist unverwehrt*,—What is allotted by fortune is not forbidden. It would appear that the family of Lauffer was of considerable importance in the town of Nuremburg; for we find many counters bearing that name; on one is inscribed *Chourat Lauffer Nurnb.*, and *Anfang bedenkt Ende*:—the beginning considers the end; on another, *Matheus Lauffer, Nurnb., Soli Deo Gloria*,—Glory to God alone; on another, *Woolf Lauffer, Rechenpfennig*; and *Gottes Segen macht reich*,—God's blessing makes rich. One contains the legend *Glück von Gott ist*,—Fortune is from God; another, *Fleissige Rechnung macht Richtigkeit*,—Diligent reckoning produces correctness; and within the border which is formed by this legend are all the letters of the alphabet; the obverse represents a man standing before a counting-table or board, and performing a computation by means of counters. One, purporting to be made by Hans Krauwinckel, bears the legend, *Arbeit und Tugend machen dich edel*,—Industry and virtue make thee noble.

It became a practice in the fifteenth century, to distribute jettons as Etrennes, or New Year's Gifts, at the public expense, in Holland. To the most considerable officers of the United Provinces, such as the Governor General, the governor of each separate province, the Inspector of the Canal at Brussels, &c., were presented a certain number of silver and copper jettons, which were put either into a splendid purse, or into a silver box. The value of these jettons, given away as new year's presents, varied from seven hundred to three thousand pounds per annum, according to the number of persons to whom they were presented. To every person thus honoured was given a *Jett*, or a particular number of jettons necessary for the performance of computation. This custom of presenting jettons in the form of a new year's gift, was continued long after the disuse of jettons in calculation; and was afterwards regarded so far as a prescriptive right, that the Dutch officers, down to the latter part of the last century, received a certain sum of money annually in lieu of the jett of jettons given in earlier times.

It appears that the Nuremburg artists had mills at which these counters were made, and that the greater part of the counters used in Europe was made by them. In nearly all cases, these counters were, for cheapness, made of copper; but the wealthier classes had them of silver, and even of gold. Corporations, abbeys, monasteries, and churches, whose revenues required a good deal of computation, were frequently provided with counters appropriated to their own use; and it is thus that we are to explain the meaning of "abbey-pieces," applied to some kinds of counters, frequently found among the ruins of abbeys. The diffusion of the knowledge of arithmetic among all the countries of Europe, has however led to the abandonment of this mode of computation; and we may now regard counters merely as monuments of old times.

Touch-pieces were a sort of coins, of which the king, when he *touched* a person in order to cure the evil, used to hang one round the neck of the patient. English touch-pieces usually bore the device of St. Michael and the Dragon on one side, and a ship on the other. This is a very ancient superstition. The latest of these pieces are of James II., Queen Anne, and the Pretender.

A SHARK is one whom all other means have failed, and now he lives of himself. He is some needy cashiered fellow, whom the world hath oft flung off, yet still clasps again, and is like one a drowning, fastens upon anything that is next at hand. Amongst other of his shipwrecks he has lost shame, and this want supplies him. No man puts his brain to more use than he, for his life is a daily invention, and each meal a new stratagem. He has an excellent memory for his acquaintance: though there passed but how do you betwixt them seven years ago, it shall suffice for an embrace, and that for money. He offers you a pottle of sack out of joy to see you, and in requital of his courtesy you can do no less than pay for it. He is fumbling with his purse-strings, as a schoolboy with his points, when he is going to be whipped, till the master, weary with long stay, forgives him. When the reckoning is paid, he says, it must not be so, yet is straight pacified, and cries, What remedy? His borrowings are like subsidies, each man a shilling or two, as he can well dispend; which they lend him, not with a hope to be repaid, but that he will come no more. He holds a strange tyranny over men, for he is their debtor, and they fear him as their creditor. He is proud of any employment, though it be but to carry commendations, which he will be sure to deliver at eleven of the clock. They in courtesy bid him stay, and he in manners cannot deny them. If he find but a good look to assure his welcome, he becomes their half-boarder, and haunts the threshold so long, till he forces good nature to the necessity of a quarrel. Public invitations he will not wrong with his absence, and is the best witness of the sheriff's hospitality. Men shun him at length as they would do an infection, and he is never crossed in his way if there be but a lane to escape him. He has done with the age as his clothes to him, hung on as long as he could, and at last drops off.—BISHOP EARLE.

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THE

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THE BANKS OF THE THAMES. IV.

ETON COLLEGE.

My eye descending from the hill, surveys
Where *Thames* among the wanton valleys strays.
Thames, the most loved of all the Ocean's sons
By his old sire, to his embraces runs;
Hasting to pay his tribute to the sea,
Like mortal life to meet eternity.
Though with those streams he no resemblance hold,
Whose foam is amber, and their gravel gold,
His genuine and less guilty wealth t'explore,
Search not his bottom, but survey his shore,
O'er which he kindly spreads his spacious wing,
And hatches plenty for the ensuing spring.

PROCEEDING eastward from the town of Henley-upon-Thames, to which we had conducted the reader in the last paper, we arrive at the spot where the Thames leaves Oxfordshire, and begins to skirt Buckinghamshire; although it still continues to form the northern boundary of Berkshire. The scenery between Henley and Great Marlow, one in Oxfordshire and the other in Buckinghamshire, but both on the northern shore of the river, has often been celebrated for its beauty. It is literally studded with gentlemen's seats, embosomed in fertile and lovely spots. Near Henley is the pretty village of Hambleton, in the church of which are the following lines, forming part of the epitaph to Sir Cope D'Oyley, who died in 1633: —

Ask not of me, who's buried here?'
Goe ask the Commons, ask the Sheire,
Goe ask the Church, they'll tell thee who,
As well as blubbered eyes can do.
Goe ask the heraulds, ask the poore,
Thine ears shall hear enough to ask no more.
Then, if thine eyes bedew this sacred urne,
Each drop a pearl will turne
T'adorn his tombe, or if thou canst not vent,
Thou bring'st more marble to his monument.

Close to the river, about midway between Henley and Great Marlow, stand the remains of the small abbey of Medenham, founded in the reign of King John, as a cell to the Cistercian monks of Woburn, in Bedfordshire; but which was so reduced in after-times, that at the dissolution of the monasteries it only contained two monks. Nearly opposite this, on the southern bank of the river, is Hurley Place, once a monastery of Benedictine monks, founded in the time of William the Conqueror. The property in later times passed into the hands of the Lovelace family, who built a mansion on the site of the old monastery. A subterraneous vault beneath the house, once the burial vault of the monks, is carefully preserved, and pointed out as the spot where Lord Lovelace and other nobles met in private, in the year 1688, preparatory to the arrival of the Prince of Orange, and the abdication of James the Second.

Great Marlow, to which we next arrive, is a pleasant town, of great antiquity. It is supposed to have been a market-town in the time of the Saxons, and possesses many records of antiquity. The old bridge at Marlow, which was taken down at the end of the last century, was mentioned in grants during the reigns of Edward the Third, Richard the Second, and Henry the Fourth, empowering the bailiffs to take toll of all goods, wares, merchandise, and cattle, passing over or under the bridge; the receipts to be expended in repairs. Part of the bridge was destroyed by the army of Major-General Brown in 1642; and Parliament ordered a county-rate to

be levied for its reparation. A new bridge was built by subscription about forty years ago.

At the part of the Thames between Oxford and Marlow, there were in the time of Queen Elizabeth seventy locks, sixteen flood-gates, and seven weirs; all of which were so much out of repair, that frequent accidents happened from the sudden yielding of the timbers; and an application was made to the lord-high-treasurer, who caused the offending parties to be amenable to the laws. Mr. Ireland, speaking of a lock which existed at Marlow in his time, says:—

Between this lock and Battersea, which is a distance of about fifty miles, in all the deep waters, the lampreys are caught in great plenty in the spring of the year, and are sold to the Dutch as bait for their turbot and other fisheries. In one season, it is said, there have been sold not less than five hundred thousand. The price of the lamprey was forty shillings per thousand; but the Dutch having lately contracted for an increased quantity, at sixty shillings, it has rendered them so scarce, as to raise the price for our own use to nearly six pounds. The Thames has sometimes furnished upwards of a million of these fish annually.

How far this state of things is maintained at the present day, we are not aware.

Not far from Great Marlow is Little Marlow; and about five miles inland is a place which has acquired an imperishable name as the temporary residence of John Milton: this is the village of Chalfont St. Giles. While the plague was raging in London in the year 1665, the great poet retired to Chalfont, where he finished his *Paradise Lost* in a house which is still standing. It is said that Elwood the Quaker, the companion of his retirement, after perusing the manuscript of this poem, returned it to him with the remark, "Thou hast said a great deal on Paradise lost, but what hast thou to say on Paradise found?" Milton made no answer, and, after a short silence, began a conversation on another subject; but a considerable time afterwards he presented his friend with the *Paradise Regained;* saying, in a pleasant tone of voice, "This is owing to you; for you made it the subject of my thoughts, by the question you put to me at Chalfont." Waller, the contemporary of Milton,—a more fortunate though a less gifted poet,—lived at Beaconsfield, another village not far from Chalfont.

When we approach within two miles of Maidenhead, we come to the village of Cookham. Here the river, which is of a considerable breadth, is divided by a number of little islands. The view embraces no very distant object, but those which compose it are of great individual beauty, and from their contrasted shapes and character collectively form a very delightful picture. The Thames branches off into three different channels, forming several islands, one of which contains fifty-six acres, mostly embowered in large masses of foliage: the others are covered with alders and osier. To the right is Cookham church and part of the village, and beyond it Cookham House, with its lofty elms. On the left is a large level mead of pasturage, enlivened by herds of cattle, and the uplands of Buckinghamshire rising beyond it.

Nearly opposite Cookham, on the Buckinghamshire side of the river, is Cliefden, the estate of the Chandos family in bygone times. A splendid mansion was built on this spot by George Villiers, duke of Buckingham, in the reign of Charles the Second, and made the scene of his dissipated pleasures. After his death it became the property of the Earl of Orkney, and afterwards of Frederick, prince of Wales, father of King George the Third. This splendid mansion was burnt down in the year 1795; but from the following description by an eye-witness, the grounds must have been very beautiful.

The gardens and pleasure-grounds were suited to the character of the edifice, while the woods are of a form and extent to confirm the grandeur of the place. This elevated situation commands a vast expanse of country, and, though not bounded by mountains, or varied by features of peculiar distinction, it is nevertheless magnificent from its space, as well as pleasing from the variety of cultivation that overspreads it; and should the eye be satiated with the unvaried luxuriance of the more distant landscape, it turns with new delight to retrace the Thames, winding through its meads, and reflecting the woods that hang down the declivities to its silver margin. The long range of wood, from the variety of its trees, the richness of its foliage, the irregularity of its surface, and the inequality of its heights, connected also with other characteristic circumstances, must be considered, in whatever point of view it may be seen, as a fine combination of grandeur and beauty.

Maidenhead, at which we next arrive, is a pleasant town on the Berkshire side of the river. Its consequence has been attributed to the building of the bridge, about the time of Edward the Third, by which means the great Western road was carried through the town. Previous to this travellers usually crossed the river at a ferry, about two miles further up the river. The bridge thus alluded to was built of wood, and lasted till the latter end of last century, when a new stone bridge was built in its stead.

Within a very short distance of Maidenhead is the Bray, to which a curious kind of celebrity has been attached, on account of the ease with which a vicar accommodated his conscience to the changes of the times in religious matters. It has been doubted by many persons whether this personage ever really existed. The story seems to have been first given in print by Fuller, in his *English Worthies*. He says:—

First we will dispatch that sole proverb of this county, viz., "The vicar of Bray will be vicar of Bray still." The vivacious vicar hereof, living under King Henry the Eighth, King Edward the Sixth, Queen Mary, and Queen Elizabeth, was first a papist, then a protestant, then a papist, then a protestant again. He had seen some martyrs burnt (two miles off) at Windsor, and found this fire too hot for his tender temper. This vicar being taxed by one for being a turncoat and an unconstant changeling, "Not so," said he, "for I alwaies kept my principle, which is this, to live and die the vicar of Bray." Such many now adayes, who, though they cannot turn the wind, will turn their mils, and set them so that, whereseever it bloweth, their grist shall certainly be grinded.

It was in the reign of Charles the Second that Fuller wrote this story, during which reign another mention is made of a vicar of Bray, as follows. Charles had been hunting in Windsor Forest, and in the chase was separated from his attendants. In returning he lost his road, and came to Bray after it was dark, where, on inquiring for the vicar's house, and being introduced, he told him that he was a traveller who had lost his way, and having spent all his money, begged that he (the vicar) would render him assistance to proceed on his journey, and that he would soon punctually repay the loan. The vicar told him he was an impostor, and rudely bade him to go out of his house. But the curate, who was with the vicar, felt pity for the traveller, and lent him a little money. The king then made known who he was, and upbraiding the vicar for his inhumanity, said, "The vicar of Bray shall be vicar of Bray still, but the curate shall be canon of Windsor." The king is said to have made good his word.

It is probable that in this, as in other cases, the story is true in foundation, but has received additions from the various persons by whom it has been related. Be this as it may, we must proceed onward in our journey.

After leaving Bray the course of the river brings us to the villages of Dorney and Lower Boveney, on the Buckinghamshire side, and to those of Water Oakley and Clewer on the Berkshire side of the river; till at length we come to that celebrated part of the river which presents to us Windsor, with all its old associations, on the southern bank, and Eton and Slough, the one celebrated for its classical seminary, and the other for being the residence of the distinguished family of the Herschels, on the northern.

From this point we must resume our journey at another opportunity.

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GARDEN HERBS.

Savory. (*Satureia.*)

"There be two kinds of savourie: the one endureth winter, and is of long continuance, the other an annual or yearly plant resembling hyssop, but lower, more tender, and brittle; it bringeth forth very many little branches, compassed on every side with narrow and sharp-pointed leaves, longer than those of thyme; among which grow the flowers from the bottom to the top, out of small husks, of colour white, tending to a light purple. The root is hard and woody, as is the rest of the plant. Summer savourie groweth up with a slender brittle stalk of a foot high, divided into little branches. The flowers stand hard to the branches, of a light purple, tending to white." Gerarde, 1597.

The above accurate description, written at so early a period, seems to prove that the herb Savory was well known in England previous to the time usually assigned for its introduction here. Indeed we can scarcely doubt that this and the other herbs of Southern Europe, which familiar use had made almost necessary to the Romans, were cultivated during their residence in Britain.

The generic name of this plant is most probably derived from the Latin word *saturo*, to cram or satisfy, in allusion to its use in seasoning broths, soups, and stewed meats. The English name is also evidently taken from the relish imparted by the herb to preparations of that kind.

Savory is supposed to have grown abundantly near Troy, in a place called Thymbra. Both the winter and summer variety are natives of the South of Europe, and are noticed by Virgil among the fragrant herbs and shrubs that are desirable to be planted near a bee-hive.

> The verdant lavender must there abound,
> There savory shed its pleasant sweets around.

The Romans employed this herb in a different manner from ours. Among them, it is used as a kind of spice to give warmth to lettuce and cool salads, and also as an ingredient in their acid sauces. "Certainly," says Phillips, "a more rational way of taking this hot acrid herb, than the present method of using it, to give heat to our already too inflammatory dishes." Dodoens tells us, that savory in its operations resembles thyme, and is very good, and necessary to be used in meats.

Both kinds of savory are propagated by seeds. Those of the annual plant are raised on any light soil, early in April. When of a sufficient height the plants are to be thinned out to about five or six inches apart, and allowed to remain for use. After being once cut, they produce no succession of shoots, therefore the whole plant may be pulled up, more advantageously than taking cuttings from several. If required for drying, this herb may be treated in a similar manner to others, except that the plant, after cutting off the extreme roots, is to be preserved. "Keep it dry by you, all the year," says Culpeper, "if you love yourself and your ease, and it is a hundred pounds to a penny if you do not; keep it dry, make conserves and syrups of it, and withal take notice that the summer kind is the best."

Winter savory may be propagated by slips as well as by seeds. If the slips or cuttings are planted in spring, they will readily take root, and become strong plants, which in autumn may be taken up, with plenty of mould at their roots, and transplanted out in beds or rows at a foot distance from each other. They should be planted in a poor soil: in rich earth they imbibe too much moisture to stand the severity of our winters. When placed in a congenial soil, winter savory grows to a considerable sized shrub.

There are other species of savory now cultivated in this country, but they generally require the protection of a greenhouse, and are not in use as culinary herbs.

Savory has a very hot, penetrating, and aromatic taste. It is an excellent seasoning for farinaceous food, as peas, beans, &c., preventing wind in the stomach. It was formerly much more used in made-dishes than at present, and was also an ingredient in cakes, puddings, sausages, &c., being thought inferior to none of the European aromatics, for pleasantness of smell and flavour. Savory belongs to the natural order *Labiatæ*, and to the Linnæan class and order *Didynamia Gymnospermia*.

Horehound. (*Marrubium.*)

"White Horehound (*Marrubium album*), bringeth forth very many stalks, four-square, a cubit high, covered over with a thin whitish downiness; whereupon are placed by couples at certain distances thick whitish leaves, somewhat round, wrinkled, and nicked on the edges, and covered over with the like downiness, from the bosoms of which leaves come forth small flowers of a faint purplish colour, set round about the stalk in round whorls, which turn into sharp prickly husks after the flowers be past. The whole plant is of a strong savour, but not unpleasant; the root is thready." Gerarde.

The above is an admirable description of the common sort of horehound, which grows so plentifully not only in our gardens, but on waste ground, in various parts of England, in hot, dry, and dusty situations. The English name is supposed to be given on account of the hoary or frosty appearance of the surface of the plant, and also from the resemblance of the herb to the common hound's-tongue, a plant which is said to have an odour like that of a kennel of hounds.

Besides the common horehound, there are many other species of Marrubium cultivated in this country. Eleven are noticed in the *Hortus Kewensis*, and Miller enumerates fifteen.

This herb was much extolled by the ancients for its efficacy in removing obstructions of the lungs. According to Pliny, the Romans thought it one of the most valuable herbs used in medicine, and chiefly for the disease above-named, though they also made use of it as a remedy for the ringworm, and an antidote against poison. The juice was likewise employed to mitigate diseases of the eyes.

Horehound doubtless possesses some share of medicinal power; but its virtues do not appear to be clearly ascertained, and it is now very rarely prescribed by physicians. It has, however, its domestic reputation for relieving asthmas, obstinate coughs, and pulmonary consumptions. Its use is also thought beneficial in affections of the liver. Lozenges made of the juice of this herb and sugar, form a common remedy for colds. When recently dried, horehound has an aromatic flavour, which it loses when kept.

In the modern Pharmacopœias, we find statements somewhat varying in their nature respecting the virtues of this herb. According to one of these, it was formerly regarded as a tonic, expectorant, and diuretic, and was used in asthmas and coughs. In large doses it was also employed as a slight aperient; but it is altogether unimportant in any of these respects. Another informs us, that horehound is tonic, stimulant, deobstruent, expectorant, and vermifuge; excellent in humoral asthma, obstructions of the viscera, and violent salivation; and that although it is falling into disuse, it appears to be as good as many other bitters in fashion. The dose is half a drachm to a drachm of the powder, half an ounce to an ounce of the expressed juice, or two ounces of the infusion, three times a day.

Horehound is an annual plant, and may be raised by sowing the seed in any of the spring months. The downy appearance of the plant and its strong but not very agreeable odour, make it distinguishable from other herbs. It belongs to the natural order *Labiatæ*, and to Class XIV, Order 1, (*Didynamia Gymnospermia*), of the Linnæan system.

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ON THE MANUFACTURE OF ARTIFICIAL FLOWERS.

THE distinction between use and ornament should ever be borne in mind, in estimating the relative importance of different employments; but even when all necessary allowance is made for this difference, there still remains much which is worthy of our notice, in the arts connected with the production of articles of decoration and ornament. The processes involved in these manufactures are often as ingenious, and require as much practical skill, as those by which more important articles are produced.

We are led to make this remark by a consideration of the mode in which artificial flowers are produced. Every one knows that attempts are made to imitate flowers and leaves, by various means, as ornaments for female dress, and that some of these attempts are remarkably successful; and it may not be uninteresting to the reader to trace in a general manner the mode in which these flowers are made.

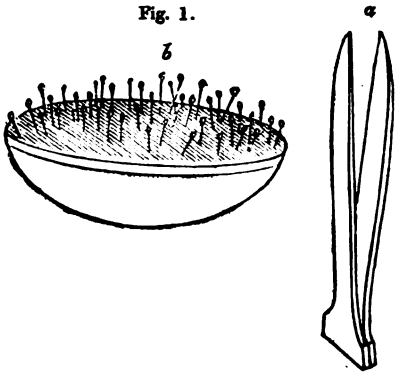
The Italians appear to have been the first Europeans who excelled in the art of fabricating artificial flowers. By degrees the art found its way from thence into France, a country whose people are singularly skilled in the arts calling for taste and delicacy. Before excellence was attained in the art, many different substances were employed as the material of which the flower was made. At first, ribands of different colours were used, plaited, curled, and twisted as nearly to the desired form as possible. This mode of imitation gave place to the employment of feathers, which are more delicate, and more easily worked into desired forms. To supply the colours which are not generally found in feathers of European birds, it was necessary to paint them; but the blending of the tints was seldom effected with the desired accuracy. It is said that the savages of South America, taking advantage of the gorgeous plumage of inter-tropical birds, succeed in producing therewith admirable imitations of flowers.

The Italians afterwards employed silk, as obtained from the cocoons. No substance takes colour better, nor retains it longer than silk; while its transparency and softness imitate pretty closely the velvet-like texture of the petals. They also employed, but with less success, Italian gauze, as the material for the imitative flowers. Different artistes have tried in succession, shells, wax, and paper; but all have had some defect which rendered them unfitted for the production of flowers for sale. About twenty years ago a French manufacturer devised a mode for making these articles from whalebone; but the substances which have been most generally employed are those which we are about to describe.

The exercise of this art is now carried on both in France and England; and it is probable that the modes of proceeding are nearly the same in both. We will therefore describe the general practice in France, taking a *rose* as an example of flower to be imitated.

The petals are formed of the material called *batiste*, and the leaves of Florentine taffety. The batiste is chosen of a very fine quality, and is first pressed, then calendered, in order to render the surface as level and smooth as possible. The piece of cloth for each petal is then cut out, punched, or stamped, by means of a cutting tool having exactly the contour required, so that no scissors are necessary. A great number of these cutting tools are kept by the artificial florist, in accordance with the various sizes of the petals, and also with the shapes. When the petals are thus all cut out, they are prepared for painting. The pigment employed (supposing the flower to be a rose) is carmine in an alkaline solution, generally salt of tartar. The florist takes up each petal separately, by grasping it at one extremity by means of a sort of pincers, represented at *a* Fig. 1, and plunges it into the coloured solution; then immerses it into pure water, in order that the slight whitening of the tints at the edges may be produced by the partial action of the water. The deeper tint of the middle of the petal is then given by means of a pencil, in the manner of painting; and where the variety of the flower requires it, a striped succession of tints is produced. The colour is purposely made very faint and delicate; and if the tint resulting therefrom be too light, a second immersion deepens it. Any peculiar tints, or disposition of tints, belonging to the flower to be imitated, are given with the pencil, since the immersion merely gives the general colour to the whole of the petal.

Fig. 1.



We have now to attend to the leaves. The taffety of which the leaves are made, is coloured in pieces about a yard long, before being cut. When it is painted, the taffety is stretched over a frame, and left to dry. After this, a solution of gum arabic is laid on one side of the taffety, to produce the glossy appearance usually observable on the upper side of the leaves. The peculiar dull, soft, velvet-like appearance of the under surface, is then imitated with a coloured solution of amidou, applied with a pencil, and having the desired tint and strength: the art in this process consists in using the amidou in such a state that it shall dry without gloss. When the peculiar velvet texture of the under side of the leaf admits of it, the taffety is coated with a sprinkling of *flock*, or shreds of woollen cloth cut up into the minutest fragments; the taffety being first gummed, and, when half dried, coated with the flock.

Those leaves and leaflets of which both surfaces are nearly destitute of gloss, are treated in a way accordant with their appearance, the taffety being coated with the amidou rather than with gum.

When the taffety is dry after these operations, it is cut out into the requisite forms by stamps similar to those used for the petals; different sizes and shapes being employed for leaves differently situated with respect to the flower. The taffety, when about to be cut, is laid on a block of wood, a piece of sheet lead, or a sheet made of an alloy of lead and tin. After this, a curious process is performed, in order to give imitations of the veined appearance of the leaf. Moulds are prepared, consisting of two parts, similar in effect to those employed for pressing butter into small ornamental forms. The mould is made of copper, and the inside of the bottom contains an engraved representation of one side of the leaf. The stamp, forming the other part of the instrument, is made of iron, and has on its lower surface an engraved copy of the upper side of the leaf, the raised parts being represented by elevations, and vice versa. Several leaves are then placed one on the other in the mould adapted to their form; and the stamp, previously heated to a moderate degree, is then pressed down upon them, and left in contact with them for a short time. This process gives to the leaves not only the veined appearance, but also the curves and bends which we find in nature. In Fig. 2, *b*, the interior appearance of one of the moulds is represented, as seen in a direction perpendicular to it; and at *a*, the stamping-

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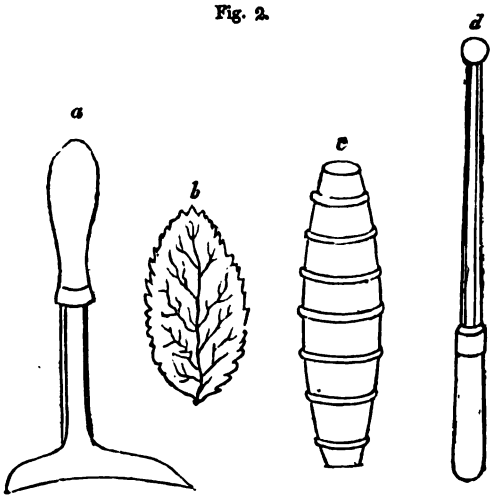
iron, fixed to a handle: *c* and *d* are two other implements employed to produce marks on the taffety, one being surrounded by ridges or rings, and the other being terminated by a disk.

Fig. 2.



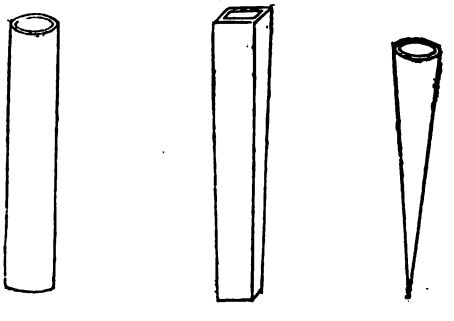
The buds are formed of little pieces of taffety or some similar substance, filled with cotton, silk filaments, or flour, and made to the requisite shapes. They are then bound with silk to small pieces of iron wire, and stuck into a basin of sand (*b*, Fig. 1,) where they remain till dry.

The stamens are made of little bits of silk, fixed to the end of a small piece of brass wire, and dipped in size or glue to give them a requisite degree of firmness; the different filaments being kept carefully separated during the subsequent drying. When they are dry, the end of each little filament is moistened with paste made of wheat flour and gum arabic, and dipped into a basin containing bran coloured yellow. Each filament or stamen thus takes up on its point a particle of bran, which forms the anther.

The separate parts being thus made, the artificer proceeds to put them together. The leaflets are cemented or sized round their points; the petals likewise are cemented around each other, the smaller within and the larger without; a curved shape being given to them when required by appropriate tools. Then follows the calyx, which encloses the ends of all the petals, and also the leaflets enveloping the bud. All the parts are cemented in their proper places with cement made of flour and gum. The stalk is made of one or more pieces of iron wire, attached to the little piece of brass wire which holds the stamens: the wire is enveloped, first in cotton, and then in serpentine strips of paper having the necessary green tint.

The leaves are mounted upon a piece of copper wire. These are arranged in threes, as presented by a natural rose; the most yellow and the smallest in size being nearest the centre. The stalk of the leaves is made in a manner similar to that of the flower, and is also united to it in a similar manner.

Fig. 3.



In the course of these operations, the contour of the several parts are given by tools called *mandrins*, of which three are represented in Fig. 3. They are cylindrical, conical, pyramidal, ellipsoidal, &c., according to the purpose to which they are to be applied.

Such is the general mode of making an artificial rose; and it may easily be conceived that the processes for producing any other flower will be nearly the same, varied only in the colours with which the batiste and taffety are painted, and in the form of the stamps and moulds by which the requisite forms are given.

RURAL SPORTS FOR THE MONTHS.

JUNE.

When with his lively ray the potent sun
Has pierced the streams, and roused the finny race,
Then, issuing cheerful, to thy sport repair;
Chief should the western breezes curling play,
And light o'er ether bear the shadowy clouds,
High to their fount, this day, amid the hills,
And woodlands warbling round, trace up the brooks;
The next, pursue their rocky channel'd maze,
Down to the river, in whose ample wave
Their little naiads love to sport at large.
Just in the dubious point, where with the pool
Is mix'd the trembling stream, or where it boils
Around the stone, or from the hollow'd bank
Reverted plays in undulating flow,
There throw, nice-judging, the delusive fly;
And as you lead it round in artful curve,
With eye attentive mark the springing game.
Straight as above the surface of the flood
They wanton rise, or urged by hunger leap,
Then fix, with gentle twitch, the barbed hook:
Some lightly tossing to the grassy bank
And to the shelving shore slow dragging some,
With various hand proportioned to their force.
If yet too young, and easily deceived,
A worthless prey scarce bends your pliant rod,
Him, piteous of his youth and the short space
He has enjoyed the vital light of Heaven,
Soft disengage, and back into the stream
The speckled captive throw.—THOMSON.

UNLIKE the sports which have occupied our attention during the preceding months, the practice of *Angling* is of a quiet and contemplative nature, and, while it leads to scenes of the most picturesque description, it leaves the mind of its advocate at liberty to enter into the enjoyment of them, and gives him leisure to mark their peculiar features. He does not hurry through the scene of his sport in eager and exciting pursuit of game, but lingers for days together among the windings of some romantic river, and only needs the eye of a poet or a painter, to gather materials from the scene around him, that shall enliven many an after-hour, and afford him sincere pleasure when the amusement which gave birth to these ideas may be no longer practicable. Thus, when the sport itself has not answered the expectation of the angler, he is seldom found to acknowledge that his time has been wholly wasted. He is ready to say with an old writer (Lady Juliana Barnes) on his favourite art, that

Atte the leest, he hath his holsom walk, and mery at his ease, a swete ayre of the swete savoure of the meede floures that makyth him hungry; he hereth the melodyous armony of fowles; he seeth the yonge swannes, heerons, duckes, cotes, and many other fowles, wyth theyr brodes; whyche me seemyth better than alle the noyse of houndys, the blastes of hornys, and the scrye of foulis, that hunters, and fawkeners, and foulers can make. And if the angler take fysshe; surely, thenne is there noo man merier than he is in his spyryte.

It is well known that the term *angling* applies to the practice of taking fish with a rod, line, and baited hook, in contradistinction to all other methods of fishing. Of the antiquity of this practice we have proof in the early mention made of the implements used in angling, in the Scriptures. The book of Job contains several allusions to the use of the hook and the line; "Canst

thou draw out leviathan with a hook, or his tongue with a cord which thou lettest down," &c. Similar allusions are likewise made by the prophet Isaiah, Ezekiel, Amos, and Habakkuk. Nor is it in the sacred writings alone that we find these incidental notices of the angler's art. Throughout the writings of the ancients, there are sufficient evidences to prove its existence at a very early period, and figures connected with this art are also found on some of the most ancient sculptured relics.

It is amusing to observe the way in which Isaac Walton attempts to exalt and justify, from the charge of cruelty, this, his favourite amusement. He speaks of the sanction given to the art by the practice of so many devout and contemplative men as the patriarchs and prophets of old, taking it for granted, we know not why, that Moses and Amos were both anglers. He dwells on the fact of our Saviour having chosen four of his apostles from among simple fishermen, whom he never reproved for their employment or calling, as he did the scribes and the money-changers.

And it is observable, (continues our honest enthusiast,) that it was our Saviour's will that these four fishermen should have a priority of nomination in the catalogue of his twelve apostles: as, namely, Peter, Andrew, James and John, and then the rest in their order. It is also to be believed, that all the other apostles after they betook themselves to follow Christ, betook themselves to be fishermen too; for it is certain that the greater number of them were found together, fishing, by Jesus after his resurrection.

Without attempting to follow the worthy angler through all his laudatory remarks, we may still pronounce angling to be a very fascinating pursuit, and one which, without being either dangerous or expensive, is productive of much interest and amusement, so that, while many may prefer the more exciting diversions of the chase, there will ever be found a large number of persons equally devoted to this quiet and solitary sport.

Simple as the practice of angling may appear to those who have never personally engaged in it, yet, in order to pursue it successfully, much patience and address are requisite, together with a peculiar skill and dexterity of hand, somewhat difficult to be obtained, and impossible to be described.

There must be a certain quickness of eye to judge where the fish lies—a precision and neatness of hand to cast the line lightly, and with such truth and address that the fly shall fall on the very square inch of the stream which you aimed at, and that with as little splash as if it were the descent of the natural insect; there is a certain delicacy of manipulation with which you must use the rod and reel when (happy man!) you actually have hooked a heavy fish; all of which requisites must combine to ensure success. There are the same personal qualities requisite in shooting, billiards, and other exercises of skill, in the use of the turning lathe, and in the management of philosophical experiments. If thou hast any of this species of alertness of hand and truth of eye in thee, go forth, gentle reader, with *Salmonia* in thy pocket, and return with thy basket more or less heavy in proportion to thy perseverance. But if thou wantest this peculiar knack, we doubt if even the patience that is exercised in a punt above Chelsea bridge would greatly mend thy day's work: though thy dinner depended upon it, thou mayest go on flogging the water from morning till midnight, entangling the hook now in a bush, now in a stem, now driving it through the nose of some brother of the angle, and now through thine own, but not a fin wilt thou basket, whether of full-trout or minnow; and thou must content thee with half the definition of an angler, and be the fool at one end of the stick and string, without the gudgeon at the other*.

Great care must be taken in the construction of the angler's implements. It is well for all who enter with ardour into this amusement to become thoroughly acquainted with the formation of fishing-tackle. By this means they will not only be able to repair such articles as are accidentally injured during their excursions, but will be able to judge of the relative value of those offered for sale, and to make their purchases to better advantage. A very important implement to the angler is the fishing-rod. This is made of various degrees of strength and elasticity, and is longer or shorter according to the kind of fishing for which it is required. Thus there is the bottom, the fly, and the trolling rod, the single and the double-handed rod, the bag rod, the walking-stick rod, and many smaller varieties. Much depends on a just adaptation of the different degrees of elasticity in the several pieces of wood of which a rod is composed, and it is necessary to ascertain the materials employed, before we can depend upon the uniform flexure of the rod as a whole piece. This is especially needful in a fly rod, which should be solid throughout, and should be adjusted so that the several joints shall have a just gradation of elastic properties, the butt being the lowest, and the point the highest in the scale of elasticity. Ash, hiccory, lance-wood, and split bamboo, succeeding each other, and surmounted by a splicing of whalebone, are said to form a good elastic rod.

The materials used in making lines for angling are, first, as being most esteemed, the intestines of the silk-worm, then silk, horse-hair, bristles, cow-hair, and also Indian and other grasses. These substances are employed singly or two or more together, and the lines may be either purchased or fabricated by the angler. The different varieties of hooks necessary to the completeness of fishing apparatus are too numerous for description. The principal kinds in favour with English anglers, are known as the Limerick, Kendal, Sneckbend, and Kirby hooks. The float, the reel, and the various descriptions of artificial fly, might furnish us with matter for much observation, but we are chiefly concerned with the sport itself, and the seasons at which it is pursued.

Although there is not a month in the year in which the angler must necessarily discontinue his sport, for even the winter may afford some opportunities to those who can brave its severities, yet the period from April to October is found by experience to be the most advantageous time, and is therefore considered the regular angling season. The London angler has not the privilege of fishing in the Thames until the beginning of June, and it has been remarked that the interests of fishers in general would be promoted were the spawning fish equally protected in other rivers during the early spring months. While the heat of summer lasts, the experienced angler will pursue his sport at a very early hour in the morning and will return to it again in the cool of evening. As the season advances towards the colder months, the middle of the day may be considered preferable. In winter any part of the day, when the weather is open and mild, may be taken advantage of—for in frosty weather no hour is good. It is well-known that on dark lowering days during summer, fish are well disposed to take the bait, especially in ponds and still waters. When there is a probability of thunder, the angler has little cause to hope for success. An electrical state of the atmosphere is prejudicial to the appetite of fishes. On a bright sunny day, if a cool breeze prevails, all fish are likely to be alert. The south and south-west winds are most favourable to the sport, and an east wind the most decidedly unfavourable.

Many fishing enterprizes are defeated through want of caution in approaching the water. Salter, in his *Angler's Guide*, gives a very necessary warning on this head:—

After you have made choice of a place to fish, first plumb the depth truly and with as little disturbance to the water as may be; let your line, with the plummet to it, remain in the water while you make and cast the ground bait, by which time the line will be softened and stretched, consequently less likely to break. If the water be still, throw in small pieces of ground bait; if a strong current large pieces: keep as far from the water as you can, and go quietly and slyly to work, for fish have so many enemies that they are suspicious of everything they see, feel, and hear; even the

* From SIR WALTER SCOTT's review of SIR HUMPHRY DAVY's *Salmonia*, in the *Quarterly Review*, Vol. 38.

shaking the bank of a river (under which fish frequently lie), will alarm barbel, chub, &c., and spoil the angler's sport: this occurs frequently by strangers walking to and fro, to see and inquire what sport, &c., and also, when two or three anglers are fishing near each other; therefore avoid agitating the water by trampling on the bank unnecessarily; drop your baited hook in the water gently, and you will kill more fish than two or three anglers who act differently.

Thus, everything must be avoided which is likely to attract the attention of the fish. The angler will endeavour not to let his own shadow or even that of his rod fall upon the water. He will take care that there be nothing glaring in his dress, but will consider in this respect what is the prevailing colour of the spot in which he means to fish. If it be a rich pasture, a dark dress will not be unsuitable, but if he is going to stand on a sandy or pebbly soil, the more nearly he can assimilate himself to it by wearing something of a drab-coloured suit and hat the better.

The baits used by anglers are varied with the seasons, the locality, the hour of the day, and other circumstances. There seems to be a particular intelligence among the finny tribes, guiding them to choose only a seasonable repast. The most tempting flies presented to a fish when they are out of season will scarcely entice his appetite, and the bait that will prove effectual at one part of the day, will be offered in vain a few hours later. It is impossible therefore to be an accomplished angler without studying the natural history of insects and worms of various kinds, and as they exhibit themselves in different localities. The flies which attract fish are not the same in all parts of England. In some districts, the May-fly, that especial favourite of anglers, is wholly unknown. The distribution of insects is affected by causes connected with climate and cultivation, and these must be considered in our selection of baits. It is impossible to give general directions on this head, but some attention to the habits and natural history of insects as it may be acquired by reading and observation will soon teach the young angler to seek and employ the most killing baits. Where it can be effected, the use of artificial, instead of natural baits, is much to be preferred. It can add no pleasure to the sport to know that we are unnecessarily inflicting pain.

In order to remove from the mind of the angler any suspicion that he may be engaged in a cruel sport, the author of *Salmonia* urges that in all probability fishes are less sensitive than man.

Under the favour of such high authority (says Scott), this is a point which none can know but the fish himself. The variety of modes in which the trout endeavours to escape from the hook certainly seem to show that his apprehensions are extreme, and the hurry and vivacity of his motions indicate irritation and pain. Being, however, a denizen of another element, our sympathies are not so strongly excited by the sufferings of a fish, as of creatures that share the same element with us.

As the natural history of Fresh-water Fishes already forms the subject of a course of articles in this Work, we have departed from our usual practice of describing the animal to which the sport refers; and must therefore direct our readers to those articles for a particular notice of the more distinguished members of the finny tribe inhabiting our streams.

"To miss the good which may be got by suffering evil," says one of our old divines, "is the worst of evils; to lose that gain which should be gotten by losses, is of losses the greatest; but to grow worse with suffering evil, is perdition itself." Men are often found under this condemnation; women, I think, but seldom. The sons of perdition are more numerous than the daughters. If women are not made of finer clay, there has been more of the dew of heaven to temper it. Or is it that "though the dews of divine grace fall everywhere, yet they lie longest in the shade," while men brave the wind, seek the sunshine, and are exposed to all weathers?—SOUTHEY.

FRESH WATER FISH.

V.

THE common Perch is regarded as the type of a very extensive family of *Acanthopterygious* fishes; that is, fishes having bony skeletons, with prickly spinous processes in the dorsal fins. They all more or less approach the common perch in general form, whence this fish is called the type of the family.

The perch is one of the most beautiful of our fresh water fishes. Its body is deep, the scales very rough, the back much arched, and the side-line approaches near to it: the irides are golden yellow; the teeth small, pointed, and curving backwards, and disposed in the jaws and on the roof of the mouth, which is large; the tongue is smooth; the edges of the covers of the gills are serrated, and on the lower end of the largest is a sharp spine. When the perch is in good condition its colours are brilliant and striking; the back and part of the sides being of a rich greenish brown, passing below into golden yellowish white, with five or six broad dark bands pointing downwards, owing to which, the fish when in the water appears very dark coloured with lightish stripings, but when taken out of the water it is altogether of a greenish cast. The first dorsal fin is brown; the membrane connecting the rays is partly spotted with black: the ventral fins are of a bright vermilion; the anal fins and the tail (which is a little forked,) are of the same colour, but rather paler.

The perch is furnished with two orifices to each nostril, surrounded with three or four large pores, destined apparently for the discharge of a viscous secretion, which defends the skin from the action of the water.

This distribution of the mucous orifices over the head, is one of those beautiful and advantageous provisions of nature, which are to be so often observed and admired. Whether the fish inhabits the stream or the lake, the current of the water in the one instance, or progression through it in the other, carries this defensive secretion backwards, and spreads it over the whole surface of the body. In fishes with small scales, this defensive secretion is in proportion more abundant: and in those species which have the bodies elongated, as the eels, the mucous orifices may be observed along the whole length of the lateral line.—YARRELL.

The perch has been known in all ages and in most civilized countries. The Greeks and Romans were well acquainted with it, and it is not a little remarkable that in most countries of Europe its name does not greatly differ from the specific name given to it by Aristotle. It is very generally diffused throughout Europe and the corresponding latitudes of Asia; but it probably thrives better in cold than in warm climates; since it is stated that perches, three or four feet long, are taken in Sweden and Lapland; while in England and in France they seldom exceed a foot and a half.

Linnæus has noticed a deformed variety of perch, with the back greatly elevated and the tail distorted, as occurring at Fahlun in Sweden, and in other lakes in the north of Europe. Mr. Daniel mentions still more singular perch taken by him in the docks at Blackwall; these had each a solid mass of fat placed on the ribs, but not adherent to them; the stomach was apparently closed and impervious, and had not been distended by food for some time. He also mentions another singular kind of perch found in Malham water, not far from Settle, in Yorkshire: these grow to five pounds and upwards in weight, yet are all blind of one or both eyes, "and, therefore," as Mr. Blaine remarks, "might have been advantageously seized on by the punster, who observed of his friend's monocular dog, that he needs must prove an excellent guard, because he would have *an eye out* on all occasions." Specimens of perch almost entirely white, have been found in the waters of particular soils.

The perch grows slowly, but its increase depends greatly on the nature of its habitation: in ponds and

British Records

other small stagnant waters it seldoms attains any great size: but in rivers and estuaries, and especially in such waters as are subject to the rising tide, although without current, they grow quickly, and become very fat. In large stagnant waters, if there be plenty of insect food, and the young fry of other fish, they multiply rapidly. In rivers they prefer the sides of the stream rather than the rapid parts of the current, and feed indiscriminately upon insects, worms, and small fishes. "They delight to lie about bridges and mill-pools; in and near locks; about shipping, barges, and floats of timber; in navigable rivers, canals, and in wet docks, also in the still parts of rivers, and in the back-water of mill-streams, as well as in deep gentle eddies, in ponds about sluices, and the mouth of outlets and flood-gates, commonly affecting the gravel, or sandy parts of the pond."

They spawn in April or May, according to the season or climate, and deposit their eggs usually among aquatic plants, such as the stems of reeds and rushes. The eggs are enveloped in a kind of glutinous reticular band. In less than a fortnight the eggs burst, and the young fry appear. Perch will breed in small vases of water, if properly fed. A perch, of only half a pound weight, has been found to contain 280,000 ova. The weight of three pounds is considered large for this fish. Donovan speaks of one of five pounds. Montague took one from the Avon, in Wiltshire, of eight pounds; and Pennant says that one was caught in the Serpentine River, Hyde Park, of nine pounds.

Most predatory animals are solitary, but the perch is a remarkable exception to the rule. This fish is gregarious; a number of them will herd together, as if by a sort of compact. In fine, tranquil weather, they may be observed in troops in a lake, river, or even in a large ditch, near the surface of the water, quite motionless. But their perceptions being very acute, they are disturbed by the smallest unaccustomed sound, and will disappear with great celerity into some hole which is the common dwelling of the troop. "And, as one has wittily observed," says Walton, "if there be twenty or forty in a hole, they may be, at one standing, all catched one after another; they being, as he says, like the wicked of the world, not afraid, though their fellows and companions perish in their sight."

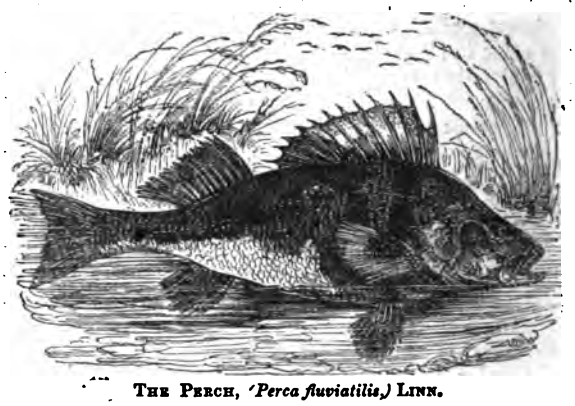
The perch is very voracious. It devours with avidity the young and weak of most animals of its class, as also water lizards, frogs, small snakes, aquatic insects, worms, naked mollusca, &c. The perch may be noticed in summer, springing from the surface of the water in pursuit of gnats and flies; and it will even fasten on animals whose means of defence are too effectual for it. Thus, it sometimes swallows the stickleback, the strongest spines of which fasten in the gullet, so that the perch can neither get it up or down, and consequently it is starved to death. It is also in its turn subject to the attacks of powerful enemies, notwithstanding the formidable character of its dorsal spines: it frequently falls a prey to pike, large eels, and trout, as well as to the web-footed and wading birds. The pike, however, is frequently wounded by the dorsal spines of the perch, and has been seen to shake its prey out of its mouth, apparently in great pain. Walton says that the pike will not attack the perch unless excited by extreme hunger; "for to affright the pike, and save himself, the perch will set up his fins, much as a Turkey-cock will sometimes set up his tail."

The perch is also subject to the attacks of a small animal, appropriately named by Dr. Nordmann, *Actheres Percarum*, or *Pest of the Perch*. It is found in fresh water, and attaches itself to the common, and another species of the perch genus, and takes its station usually within the mouth, fixing itself by means of a sucker, with which it is provided, in the cellular membrane so deeply, that it cannot disengage itself, or be extracted by external force, without rupturing what are called the arms attached to the sucker, and leaving the animal behind. This animal often fixes itself to the palate, and even to the tongue.

When we consider, (says Mr. Kirby,) that these predaceous fishes often gorge their prey, swallowing it entire, we see how necessary it was that our parasite should be thus fitted to fix itself firmly, and root itself, as it were, that it may be enabled to withstand the pressure and violent action of the bodies that pass over it, for the palate and tongue of a perch must be a perilous station. This purpose seems further aided by a quantity of saliva, usually formed around it. These pests of the perch are themselves subject to the incursions and annoyance of animals still more minute than themselves. A small species of mite makes them its prey, and when the saliva just mentioned is removed, they are often found quite covered by a species of Infusory, belonging to the genus *Vorticella*.

The perch is tenacious of life, and will live for some hours out of the water. It will even bear a journey of forty or fifty miles, if carried steadily, and watered occasionally. Perch are constantly exposed for sale in the markets of Catholic countries, and if not sold they are taken back to the ponds from which they were removed in the morning, to be reproduced another day. As an article of food, this fish is firm, white, delicate, and well tasted. It is not common in the London market, although it is taken of good quality in the Thames.

The Ruffe, or Pope, is a fresh water fish, closely allied to the perch. The term ruffe (rough) is well applied, on account of the harsh feel of its denticulated scales.



THE PERCH, *(Perca fluviatilis,)* LINN.

THE power of every wise parent is tempered with tenderness towards children; and requires such acts of obedience only as are fit for their condition, and such as carry along with them their own motives to compliance.—DEAN STANHOPE.

A MAN will often call it acting according to his conscience, when he acts according to his present persuasion, without ever examining how he came by that persuasion; whether through wrong education, custom, or example; or whether from some secret lust, pride, or prejudice, rather than from the rule of God's written word, or from a principle of right reason. This cannot justly be called keeping a good conscience; for, we ought not to take up false persuasions at all adventures, and then to make those persuasions our rule of life, instead of that rule which God hath given us to walk by.—WATERLAND.

No chains bind so hard, no fetters are so heavy, as those which fasten the corrupted heart to this treacherous world; no dependence is more contemptible than that under which the voluptuous, the covetous, or the ambitious man lies, to the means of pleasure, gain, or power. Yet this is the boasted liberty which vice promises, as the recompense of setting us free from the salutary restraints of virtue.—BLAIR.

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UPPLEMENT, JUNE, 1841. { PRICE ONE PENNY.

OUNT OF THE HANSEATIC LEAGUE.

H-HOUSE AT LUBECK.

hich were not so included being inhabited by tribes
arcely if at all removed from barbarism. But the diver-
of materials of which this empire was formed, its gigan-
xtent, the distance of some of the provinces from the
f government, and above all, the luxurious effemi-
which the Romans had fallen in the fourth and
es, all conspired to lead to a dismemberment of
It is probable that even if no irruption of
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These barbarians appear to have
which are now included under
nany, Russia, Poland, Denmark,
irruption seems to have been
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justice and right which, from the very rudeness of their natures, they are incapable of understanding.

One army of barbarians succeeded another in their inroads on the various provinces of the empire; the city of Rome itself was more than once pillaged by them; and by the end of the fifth century, the empire was wholly destroyed, the last emperor being deposed by invaders. The whole of Europe was now in the hands of the conquerors, and an universal chaos prevailed. After dispossessing the original inhabitants of their territory, they proceeded to divide it among themselves. The kings or chiefs of the various tribes of barbarians assumed a show of sovereign power, and took a share of territory larger than that which fell to others. But the subordinate generals and officers received their quota of land, as did also many of the meaner rank. As there was no general policy by which the whole were governed, each proprietor began to deem himself a little sovereign over the domain which had fallen to his share, and the dependants and serfs which he gradually collected around him looked up to him as a guide and superior. These dependants were often small proprietors of land, who were too weak to defend themselves, and therefore clung to some one more powerful, yielding up their small possession to him, and receiving it again from his hands as a *fief*, *feud*, or leased property. This was the origin of the *Feudal System*, which so strikingly characterized Europe during the middle ages:—the barbarians who had actually overturned the Roman Empire received the conquered land as booty, divided into parcels: these parcels of land, from various causes,—sometimes intermarriages, sometimes superior tact, and sometimes actual violence,—became gradually combined into larger portions, fewer in number. The owners of these large estates constituted the class of proud, haughty, warlike Barons, of whom we read in the history of almost every country in Europe.

But it was only in the open country that these Barons exercised their peculiar sway: in *cities and towns* their influence was much smaller. The circumstances which distinguish town from country life are sufficiently marked to show the origin of all civic communities. Where articles are manufactured, a number of persons must be congregated together, and if their city be on the sea-coast, or on the banks of a river, shipping and boats would resort to it, for the conveyance of the manufactured goods to other parts of the country.

The state of Europe then, from the seventh to the tenth century, (for it was not till the seventh century that the irruptions of fresh hordes of barbarians ceased,) was this:—The land was possessed chiefly by Feudal Barons, who had under them a large number of vassals and serfs, whose lives and properties had become almost solely at the disposal of their lords; the baron decided the disputes of his vassals in his own baronial hall: he called them out whenever he went to war; and was, to all practical purposes, their sovereign. The monarch of the country had a general sovereignty over the whole: but it was more in name than in reality. In England the contests between the Danes and Saxons and afterwards the Normans, made many changes in the sovereignty; but throughout these changes the nobles were more powerful than the monarch or the people. In Scotland the spirit of clan-ship prevailed down to a recent period. In France, the barons were more powerful than in any other country of Europe, and left to the reigning monarch only the shadow of authority. In Germany there were certain great lords who assumed sovereign authority within their own petty dominions; and Charlemagne was almost the only emperor during this period who had a real supremacy. In Italy, the country was broken up into a number of little independent states, some monarchical, some aristocratic, and others democratic. In Spain, there was a continual strife between the Moors and the Christians for the possession of the country; and when a military chief succeeded in wresting a portion of territory from the Moors, he immediately made himself sovereign over it; and thus Spain became broken up in to a number of petty principalities.

The consequences of this state of things were many and important. National laws scarcely existed, for a baron adopted on his own domain those laws which suited him best. If one feudal lord had a quarrel with another he took the law into his own hands, and revenged himself by force of arms. Again, if one baron made depredations on the domain of a neighbouring baron, captured his castle, and plundered his adherents, the sovereign had seldom power sufficient to see justice rendered, but a scene of reprisal and mutual attack followed, each vassal and serf being bound by oath to follow the plans of his lord, however iniquitous they might be, and thus all became involved in a petty but ferocious war.

But it was not only the domains of neighbouring barons that suffered from the lawless usages of the times: the cities and towns experienced the evil likewise; and we here begin to have a glimpse of the necessity for some such institution as the *Hanseatic League*. Whatever wealth resulted from the possession of large estates belonged to the barons, but all that which resulted from manufacturing and commercial industry belonged to the cities and towns, which were generally favourable towards the monarchs, and the monarchs towards the citizens. Each was likely to be benefited by a regular government which could preserve order and redress grievances; and each felt a distrust of the power of the barons. This is the chief point in the history of charters of incorporation, municipal privileges, &c. When a sovereign wanted his treasury replenished, it was the citizens, and not the barons, to whom he looked, and his authority as a sovereign was generally more readily acknowledged by the former than by the latter. As a return and encouragement for this favourable feeling, the monarch granted certain privileges to the citizens, allowing them to choose from among themselves the municipal officers, to govern the financial matters relating to the city, to establish tolls, dues, &c., and many more of a similar kind. This was the mode in which a certain degree of mutual support was established between monarchs and cities, and the time had arrived when that support was needed. The barons frequently had their castles in the immediate vicinity of populous towns, and those who were least restrained by principles of honour and justice, or who were possessed of most power, made frequent depredations on the townsmen, attacking them at unguarded hours, and, when attacked in turn, intrenching themselves in their castles. About the year A.D. 1000 sovereign power was hollow and unreal in Europe; baronial power was vast and overbearing; citizens were advancing slowly and gradually in manufacturing and commercial enterprise, and in municipal rights, but were troubled by the exactions and depredations of the barons, and also by Scandinavian pirates, who at that time infested all the ports of the Baltic and German Seas; and lastly, the Romish Church,—almost the only one then acknowledged in Europe,—was too corrupt and demoralized to improve the minds or conduct of men. It was in such a state of things that the cities and commercial towns in the north of Germany began to combine together for mutual protection.

II. Formation of the Hanseatic* League.

The city of Hamburg, situated on the river Elbe, in the north of Germany, was originally a military fort, built by the Emperor Charlemagne, for the defence of his empire from the pirates who infested the Baltic. As this fort was situated at the northern part of the empire it was generally the first to suffer from the incursions of the lawless bands of Scandinavians, and it was more than once sacked and burned by them. For four centuries it underwent various vicissitudes, but continued on the whole to increase in importance and in population. The inhabitants therefore formed alliances with various towns, for mutual protection. One of the first of these alliances of which the nature has been recorded, was made with the city of Lübeck, in the year 1241. Lübeck was a considerable commercial city, a short distance north-east of Hamburg, and the treaty of alliance declared that the two towns should jointly clear the country between Hamburg and the river Trave of robbers, and prevent pirates from cruising on the Elbe,—that the expenses should be borne equally by them,—that everything which might tend to the benefit of the two cities should be concerted in common,—and that their forces should always be united to maintain their liberties and privileges.

The alliance of 1241 was probably a separate proceeding between Lübeck and Hamburg, without relation to other cities, for there was, as early as 1169, a compact between

* With regard to the origin of the word *Hanse* two opinions prevail. According to one, this term is derived from two German words, *am see*, signifying *on the sea*, because the first Hanse towns were all situated on the sea-coast of Holland and Germany, and hence the society is said to have been originally called *Am see stenen*, or *Cities on the sea*, and afterwards, by abbreviation, *Hansee* and *Hanse*. But the other and more probable opinion is that the word *hanse* is an obsolete High-Dutch or Teutonic word, having the signification of *alliance*, *confederation*, or *association*, and hence the term *Hanse towns* implied *Confederated towns*.

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twelve towns on the Baltic shore, for mutual defence against pirates: these towns were Lübeck, Wismar, Rostock, Stralsund, Grypeswald, Anclam, Stettin, Colberg, Stolpe, Dantzic, Elbing, and Königsberg. It appears to have been a standing rule of this first confederacy that no town should belong to it but such as was either situated on the sea or on some navigable river commodious for maritime commerce. Another rule was, not to admit any towns which did not keep the keys of their own gates, and did not moreover exercise civil jurisdiction within themselves; it was at the same time permitted that the towns should in other respects acknowledge some superior lord or prince. The advantages of this confederacy were so great that other towns gladly entered into it; indeed, so rapidly did the influence of the confederation increase, that neighbouring princes and barons were often glad to cultivate the good opinion of the confederated powers, and even referred their disputes to them for arbitration. When this extension of the confederation took place, something akin to a general government became necessary, since the united efforts of a body composed of many parts are valueless unless some system is observed by the whole. It appears that when the inland towns of the north of Germany swelled the numbers of the confederates, the whole were divided into four classes, over which a certain city presided. At the head of the first class, and also of the whole league, was Lübeck, the rich and potent leader in the confederacy: this class contained the towns of Pomerania; and to the custody of Lübeck were committed the common stock and records of the confederacy. The second class comprised the towns in Westphalia, Cleves, Overyssel, Guelderland, and Mark, with Cologne at its head. The third class, with Brunswick as the chief town, comprehended the towns of Saxony. The fourth and last class, at the head of which was Dantzic, included the Prussian and Livonian towns.

The general assemblies, for the management of the affairs of the confederacy, were held at Lübeck; and an extraordinary general assembly was held every ten years, at which they solemnly renewed their union, admitted new members, excluded old ones if refractory, &c. The confederacy also chose a protector or president, in order to give dignity to their proceedings; and the choice of their protector had a marked influence on the welfare of the league; we must briefly explain the position of the persons who, for the long period of three centuries, were the chosen protectors of the league. The country which we now call Prussia, was very little removed from barbarism at the end of the twelfth century; and in order to protect Poland (which was then a considerable kingdom,) from invasion, the King of Poland granted a strip of country on the shore of the Baltic to the Teutonic Knights, or Knights of the Cross, on condition that they would subdue, and, as far as they could, civilise the rude inhabitants. These warlike knights not only succeeded in this attempt, but established towns of much importance on the Baltic coast, which, under the names of Dantzic, Thorn, &c., afterwards became well known to Western Europe. The knights formed this territory into a republic, of which the grand master of the order was president. Now the rise and progress of this republic were nearly coeval with the Hanseatic league; and there were many reasons why the two should be on good terms. The knights owed most of their influence to the maritime towns on their coast; and the commerce of those towns could not be better promoted than by joining the commercial league. Again, the constitution of the league was essentially republican, and therefore more nearly allied to the dominion of the knights than to that of an emperor or king. These were some of the causes which led the confederacy to choose as its protector the grand master of the Teutonic Knights; a custom which continued more than three centuries. By this good understanding with the knights, the Hanse Towns became possessed of all the commerce of the south shores of the Baltic, from Denmark to the bottom of the Gulf of Finland, containing countries intersected by many large rivers flowing into the Baltic, and producing many of the necessaries of life in great abundance.

III. Commercial Advantages of the League.

About the year 1252, the Hanse Towns had commenced a brisk commerce with the various towns of Flanders; but the duties and exactions laid on them in that country rendered the dealings vexatious. Hamburg therefore represented the state of Flemish commerce to a general assembly of the league at Lübeck; and it was resolved to send a deputation from Hamburg, to Margaret, countess of Flanders, to treat of more moderate duties, and of other commercial matters. Their wishes were acceded to; and shortly afterwards a similar deputation to Albert, duke of Saxony, led to similar results. These points illustrate the mode in which the league gradually acquired its power: the complaints of a single town might not have been attended to; but the associated merchants of many towns gave a weight to the representations, which, from that time forwards, monarchs and princes listened to respectfully. The opening of a commerce with Flanders was productive of important results. The league fixed upon the city of Bruges, as a *comptoir*, counting-house, or factory, for forwarding the commercial transactions of the league; and this proved of incalculable advantage by opening a communication between Northern and Southern Europe. The inhabitants of Italy, Spain, and Turkey knew but little of the countries near the Baltic, and were ignorant of the productions of those regions; but the spread of commerce under the league brought the two ends of Europe together, as it were, in a circle. The naval stores, the iron, copper, corn, flax, hemp, timber, &c., of the Baltic regions became objects of desire to Southern Europe; while the taste for the luxuries of Southern Europe began to spread in the North, as barbarism gradually wore away. Overland carriage was at that time rude in the extreme; and the conveyance of commodities from Northern to Southern Europe was by shipping belonging to the Hanse Towns; which proceeded from the Baltic into the German Ocean, through the English Channel, across the Bay of Biscay, and so round the coast of Portugal and Spain into the Mediterranean. But as the mariners' compass was not yet in use, the voyage was difficult and dangerous; and the passage from the Baltic to the Mediterranean and back again, was deemed too much for one summer. It became, therefore, desirable to have a half-way station, port, factory, or store-house, to which traders from both seas should bring their respective merchandise in summer. Now there were no towns so favourably situated for this purpose as those of Flanders, from their central situation, and from the circumstance that the long established manufactures of woollen and linen were at that time very flourishing in Flanders. To Bruges, therefore, most European nations sent their merchandise, and brought from thence the produce of other nations, of which they had need; so that this city soon became the general magazine of merchandise for all Europe; and from this circumstance, Flanders generally acquired a great increase of wealth and prosperity.

About the year 1260 a great accession of power accrued to the league, by the formation of the "steel-yard" in London. London was never a Hanse Town, properly so called; but the merchants belonging to those towns had certain important privileges granted to them for conducting business in London; and hence London became considered as a sort of ally of the league, though not itself included among the Hanse Towns. The German merchants settled in London, who may be deemed as a colony or college of Hanseatics, had their place of business in a building called the "Steel-yard;" and hence they acquired the name of the "Steel-yard Company." This company, by reason of their wealth and connexion with the Hanseatic Towns, were of frequent service to the Kings of England; and Edward the First gave them a diploma, which exempted them from any additional toll, custom, or tribute whatsoever; which diploma was acted on by the succeeding monarchs for a long period. The general warehouse of the company was in Thames Street; and the name of "Steel-yard," was applied to it, as some allege, on account of iron and steel being among the principal articles of their commerce; but, as others think, from a gradual corruption of the word "staple," (*stapel, stafel, stael, steel,*) "stapel" implying a general warehouse for keeping merchandise. As a return from the privileges which the Steel-yard company received from the English kings, they were bound, if at any time London should be besieged by a foreign enemy, to bear one third part of the expense of guarding and defending Bishopsgate, then one of the gates of the city; and were also bound to keep that gate in repair.

In the year 1280, we find the Hanseatics showing the extent of their power by a remarkably bold proceeding against the King of Norway. That monarch, influenced either by interested counsel, or by a belief that the interests of his kingdom demanded it, suspended the great privileges which the Hanse Towns had obtained from former Kings of Norway. No sooner was this resolution made known to them, than they blockaded with their fleets all the ports in the kingdom, so that nothing could be imported into the country by sea. The Norwegians, accustomed to the corn and

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other produce of Germany, in exchange for their own dried fish, threatened a general insurrection if the blockade were not discontinued. The king was forced to yield back to the Hanse Towns the privileges which they had acquired, and also to pay them a considerable sum of money. This, it must be owned, looks very much like a stretch of power; for it is not easy to perceive what right, except that of the strongest, the Hanseatics had to proceed to such measures.

The year 1300 witnessed the leaguers growing in power and influence. The city of Hamburg obtained from the Earl of Holstein a great increase of privileges; and, in several contests which the towns had with the feudal barons, the united strength of the former generally enabled them to conquer. But power, wherever it exists, is liable to abuse unless checked. We find Edward the Second complaining to the King of Norway for having suffered several English merchants to be imprisoned and their goods seized, at the instigation of the Hanse merchants, "who," says the king, "by all possible ways, strive to obstruct the advantages of the English merchants." Indeed it seems pretty clear, that the Hanseatics acted on the Baltic as if none but themselves had a right to the adjacent countries of Norway, Denmark, and Sweden.

Another contest shortly afterwards ensued between the Hanseatics and the Danes. Denmark, although wholly separated from Sweden, is at one part divided from it only by a narrow channel called the *Sound*, on whose western bank are the cities of Copenhagen and Elsineur; and through this Sound all vessels have to proceed to and from the Baltic and the German Ocean. Now it appears, that, in 1348, the Danish fleet in the Sound, having interrupted the navigation of the Hanseatics by demanding toll, was attacked and defeated by the combined fleet of the Hanse Towns; most of the Danish ships were destroyed; and the king was forced to assign to the Hanseatics the fine province of Schonen, for the space of sixteen years, as an indemnification for the expenses which they had incurred. This is the first mention which we have met with, of a toll being demanded by the Danes for the passage of ships to and from the Baltic: it has been adhered to, more or less, to the present day; and has been a fruitful source of disagreement among the Northern nations.

In the year 1361, a naval contest of a more extensive character occurred on the Baltic, in which the Hanseatics played a conspicuous part. Waldemar the Third, King of Denmark, attacked the city of Wisburg, in the isle of Gothland,—an extensive commercial emporium at that time,—and carried off a large booty. As Wisburg was a Hanse Town, or was at least closely connected with them, the Hanseatics were greatly excited: they seized on the Danish ships and merchandise everywhere; declared war against Denmark; and, having made an alliance with the King of Norway, the Duke of Mecklenburg, and the Earl of Holstein, they attacked Copenhagen. The Lübeck squadron was under a commander, appointed by the citizens; and all the rest of the fleet was commanded by the Earl of Holstein. The allies succeeded in capturing the castle, and destroying the town of Copenhagen; but they failed in an attempt on Helsinburg. The Danes, in their turn, sent a fleet to Lübeck, and defeated its squadron, taking six of their ships, burning others, and forcing the rest to take refuge in the harbour of Travemund. The contest ended without any satisfactory termination of the difficulties for which it commenced; and this circumstance seems to have led to a frequent renewal of hostilities between them, in most of which the fleets of the confederacy were victorious. In 1364, three years after the last contest, the Danes received a total overthrow in or near the haven of Wismar, where their whole fleet was destroyed, and their admiral made prisoner, by the Hanseatic fleet, usually stationed at that once famous haven.

Four years afterwards we find the confederacy in alliance with Albert, king of Sweden, against the Danish monarch: the allies attacked him on the coast of Schonen, and took several Danish towns. As Denmark was at the same time attacked, on distinct grounds, by the people of Holstein and Jutland, he found it necessary to make peace with the Hanse Towns, by granting them new and great privileges all over Denmark. But even the concession seems to have been insufficient to allay the hostile feeling between the parties; for, in the following year, the confederates attacked Denmark with such vigour as to drive the king out of his dominions; they took the castle of Copenhagen, as well as many other castles, and made prisoners of many of the nobility.

IV. Extent and Internal Government of the League.

Historians generally agree, that the period to which we have now arrived (about the year 1370), was that at which the Hanseatic league was at the zenith of its glory and power. It will, therefore, be desirable here to explain somewhat more fully the extent and internal government of the league.

The largest number of cities and towns that ever actually belonged to the league was 84, of which we here give an alphabetical list.

Anclam,	Elburg,	Königsburg,	Salzwedel,
Andernach,	Emmerich,	Kracow,	Seehausen,
Ascherleben,	Frankfort,	Kulm,	Söest,
Berlin,	Golnow,	Lemgo,	Stard,
Bergen,	Goslar,	Lixheim,	Stargard,
Bielefeld,	Göttingen,	Lübeck,	Staveren,
Bolswært,	Griefswald,	Lüneburg,	Stettin,
Brandenberg,	Groningen,	Magdeburg,	Steudal,
Braunsburg,	Halle,	Minden,	Stolpe,
Brunswick,	Halberstadt,	Munster	Stralsund,
Bremen,	Hamburg,	Nimeguen,	Thorn,
Buxtehude	Hameln	Nordheim,	Venloo,
Campen,	Hamm,	Osnabrück,	Veltzer,
Dantzic,	Hanover,	Osterburg,	Unna,
Demmim,	Harderwyck,	Paderborn,	Warberg,
Deventer,	Helmstadt,	Quedlinburg,	Werbern,
Dorpat,	Hervorden,	Revel,	Wesel,
Dortmund,	Hildesheim,	Riga,	Wisburg,
Duisburg,	Kiel,	Rostock,	Wismar
Einbeck,	Kolberg,	Rügenwalde,	Zütphen,
Elbing,	Kologne,	Ruremond,	Zwoll.

But besides these, which were all Hanse Towns in the proper acceptation of the term, there were numerous others,—comprising, indeed, nearly all the principal cities in Europe,—which were allied to them, for the mutual protection of commerce and navigation: among these were Amsterdam, Utrecht, Stockholm, Antwerp, Rotterdam, Bruges, Ostend, Dunkirk, Calais, Rouen, St. Malo, Bourdeux, Bayonne, Marseilles, Seville, Cadiz, Barcelona, Lisbon, Leghorn, Naples, Messina, and London. These towns were merely related to the confederacy for the convenience and safety of commerce; but the real Hanseatics subscribed to a common fund, out of which the salaries of officers, the expenses of meetings, &c., were defrayed. Lübeck and Cologne, as being the chiefs of the league, paid the largest quota towards this common fund; and the other towns paid according to their rank or size. The fleets were not maintained out of this fund; but each town furnished its own whenever wanted.

We have before observed that the confederacy, for convenience of business, was divided into four districts, at the head of which were the towns of Lübeck, Cologne, Brunswick, and Dantzic. All business occurring in each respective district, which was not of great and immediate importance, was usually left to be determined at the general assemblies of the whole confederacy, annually held at the head city of that district, where the records and documents of the district were deposited. But if the matter happened to be of great importance to their commerce, freedom, &c., it was reserved for the triennial meeting of the whole representatives of the Hanseatic League, usually held at Lübeck, where the journals, archives, and records of the whole community were kept.

Bruges has been spoken of as a place where the league established a *comptoir*, or general warehouse, for the reception and sale of commodities belonging to all the cities of the league. Various causes led to the removal of this comptoir from Bruges to Antwerp, where the Hanse merchants had a magnificent old house, resembling a college, surrounded by shops and warehouses. The next comptoir established was that at London, to which we have before alluded, under the name of the "Steel-yard," or the "German Guildhall." Another comptoir was established at Great Novogorod, anciently a famous commercial city and republic, tributary to Russia. A fourth comptoir was at Bergen, in Norway. Each of these comptoirs was governed by a corporate power, which superintended all the commercial arrangements of the league in the country where the comptoir was situated. At Bergen, the comptoir consisted of twenty-one large buildings; at the head of each of which was an overseer, who gave judgment on the different causes which came before him: above him was a council of merchants, consisting of one or two aldermen, and eighteen counsellors; the aldermen being chosen at Lübeck, and sent out for five years. The comptoir at Bruges, from its central situation, was more important. It included, at one time, three hundred merchants, who lived at different parts of the Low

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Countries, but made Bruges their centre of traffic: when the merchants had been thus employed for a number of years, they had acquired such habits of business and such general knowledge, that the directors and magistrates of the comptoir were generally chosen from among them. The president was elected annually, and took an oath to attend to the interests and prosperity of the confederacy. The comptoir, or "steel-yard," at London, was governed in a manner nearly, but not altogether, analogous to the others. The steel-yard was surrounded by a strong high wall; all the persons employed were bound to reside within this wall, where they lived under a discipline as strict as that of a monk in his cell,—celibacy being one of the regulations imposed upon them. Each district of the league, on the last day of each year, elected four deputies, who were sent to represent that district at the London comptoir; and from these deputies a president was chosen. All these officers of the league, on entering office, swore to obey all the regulations and statutes of the confederacy,—to administer justice among the merchants under their control,—and to do all in their power to monopolise the commerce of England in the hands of the league; for this appears to have been a standing object of the confederates. As the wealth of the Hanse merchants was frequently desired by the monarchs where the comptoirs were situated, the confederates easily gained privileges which were very repugnant to the feelings as well as to the interests of the national merchants; and it was to defend themselves from outrage resulting from this ill-feeling, that the London comptoir was surrounded by strong walls; and a system of internal discipline introduced, which has had few parallels in the history of society.

About the year 1384, the leaguers distinguished themselves by destroying a nest of pirates which infested the Baltic. The Queen of Sweden, the Danish nobility, and the Hanseatics, signed an agreement to act together in the attainment of this object. In this agreement it was stipulated, among other points, that when the confederates should take any castle from the pirates, it should remain in the custody of the Hanseatics until they should be reimbursed the expense of the war. From this it may be readily inferred that the Hanseatics furnished by far the largest share of assistance on this occasion. Indeed, so great had become the maritime strength of the Hanse, that although Queen Margaret had become sovereign of all the three kingdoms of Denmark, Sweden, and Norway, yet the Hanseatics were frequently an overmatch for her, and had more shipping and more wealth than all the three kingdoms put together. Not only, too, were the towns formidable in maritime affairs; but their power was also shown, though in a smaller degree, on land. The feudal lords, being jealous of their power, frequently molested the towns, and went to war with them; but the forces which the league brought against the nobles, were generally sufficient to subdue them.

V. Monopolizing Spirit of the Hanse Merchants, and its Consequences.

The engrossing spirit in which the Hanse merchants sought to extend their trade, frequently led to disagreements with the monarchs of the various European countries. In 1398, complaints were made by the English merchants trading to the Baltic, that the Hanse Towns interfered with their traffic, and committed many acts of injustice against them. Whereupon Henry the Fourth issued a declaration, that, "Whereas the privileges and freedom of commerce granted to the German merchants in England, *i.e.*, of the Steel-yard, London, were on condition that the English should enjoy the like in Germany; wherefore the said Hanse Towns are thereby summoned, either personally or by deputies, to answer before the king and council for the said injuries, and to make due satisfaction for the same." The declaration was also accompanied by a threat, that if the abuses continued, the privileges of the "Steel-yard" would be discontinued. As England was, even in that day, possessed of much power, the Hanseatics were more willing to accede to terms with this country than with the weaker Northern powers. Indeed, on one occasion, when some English ships seized on a vessel laden with wine, belonging to the Hanseatics, the Bruges comptoir, in a letter to the English king for redress, used a style of adulation hardly to be expected from such a sturdy body.

But depredations still continued between the Hanse merchants on the one hand, and the English on the other. The English ships made captures of many Hanseatic ships, and even killed some of their crews. The Hanseatics were, at the same time, accused of having captured or damaged many vessels belonging to the merchants of Newcastle, York, Hull, London, Lynn, Yarmouth, Norwich, and other places in England. As the English and Hanseatic merchants mutually complained of these aggressions, King Henry the Fourth sent some commissioners to Dort, in Holland, where they were met by other commissioners appointed by the Hanse; and an agreement was signed, by which each party consented to make good the damage done to the other. But it does not appear that this congress ensured amicable relations between England and the Hanseatics; for we find that in 1411 King Henry arrested in the port of Boston certain Hanseatic merchants, until satisfaction should be made for injuries, losses, and murders, sustained by the English merchants in their intercourse with the Hanseatics on the shores of Norway: the merchants could only obtain their liberty on giving two thousand marks as security for their reappearance when required. A farther attempt was made to settle these differences by a treaty between England and the Hanse in 1417, by which each party was to make amends for injuries committed on the other. As an instance of the unwarrantable violence which often distinguished the Hanseatics in these contests we are told that, about the year 1407, "one hundred fishermen of Cromer and Blakeney, in Norfolk, flying from their enemies into the port of Windfiord, in Norway, were assaulted by five hundred armed men, belonging to the Hanseatics residing at Bergen, who bound the poor Englishmen hand and foot, and threw them into the sea, where they all perished."

The intercourse between the Hanseatics and the English appears to have been disfigured by great bickering and unfriendly feeling, probably because the English were powerful enough to resist the encroaching spirit of these monarch-merchants. But on the continent the Hanseatic power was more frequently felt and submitted to. Its force had become so formidable that in the year 1418 the emperor Sigismund requested a conjunction of the Hanseatic fleet with his own, in a war in which he was then engaged. The League, in the same year, interfered as mediator in a dispute between Eric, king of Denmark, Norway, and Sweden, and the princes of the house of Holstein. Fourteen years afterwards a fleet of two hundred and six ships, (as it is said, but scarcely to be credited) having twelve thousand men on board, left the port of Wismar for an attack on the city of Copenhagen. This Wismar was a kind of neutral port in the Danish dominions, where the Hanseatics frequently contrived to raise up strife against the King of Denmark. The attack on Copenhagen failed, and Eric contrived to sow the seeds of disunion among some of the Hanse Towns, and greatly lessened their arrogance by threatening to give to other nations the same privileges which the Hanseatics had hitherto enjoyed in Denmark, Sweden, and Norway.

The singular relation between the English monarchs and the Hanseatic merchants was such, that though they continually quarrelled they could not do without each other. We find that treaties and disputes succeeded each other with great frequency. In 1437 there was a treaty between Henry the Sixth on the one hand, and the consuls and proconsuls of the Hanse Towns on the other, for renewing the treaties then in force; but scarcely three years elapsed before the old complaints were renewed.

The time was now by slow degrees approaching when the Leaguers were checked in their domineering progress by the commercial advancement of other nations, particularly Holland. The Hanse Towns which bordered on the Baltic (being also the originators of the Hanse) tried every possible means of keeping the commerce of that great sea entirely in their own hands, and pretty well succeeded. But still they were not a manufacturing community: they were dealers: they did not produce, to any great extent, manufactured commodities, but they bought and sold after others had manufactured. Now the situation of Holland gave her great facilities for manufacture, andthe Dutch gradually established a commerce with other lands independent of the Hanse, simply because she had within herself resources for carrying on manufactures. The owners of freight ships, finding that a foreign trade was establishing in Holland, settled in that country, and the Hanseatics were no longer the universal carriers for Europe. This change of prospects was not met in a friendly way by the Hanse, and we find that serious differences soon occurred. In 1441 the Hollanders and Zealanders, having lost to the value of fifty thousand guilders on the high seas, by the depredations of the Baltic

Hanseatics, and being unable to obtain, in an amicable way, any satisfaction for those losses, the towns of Dort, Haerlem, Amsterdam, Gouda, Rotterdam, Hoorne, Enchuysen, Middleburgh, Veere, Flushing, and Armuyden, fitted out a number of warlike ships. Having, by the aid of this fleet, twice beaten the Hanseatics at sea, and taken great riches from them, they compelled the Hanse to sign a very advantageous treaty, which was to hold good for twelve years after the year 1444.

This event was followed by many others in which England was an interested party. Some English ships having attempted to fish and trade on the coast of Iceland, against the positive prohibition of the Danish king, the governor happened to be killed in an affray with them; and in the following year (1448) the Danes, by way of reprisal, seized four English merchant-ships laden with commodities from the Baltic. The English considered this act to have been suggested by the Hanse merchants, and the "Steel-yard" merchants were seized as hostages till reparation was made. On this occasion an instance occurred, which was by no means the only one, of a defection of some towns from the common band; the "Steel-yard" merchants from Cologne and other western Hanse towns contrived to get their own goods and persons excepted from this seizure, leaving their brethren from the eastern towns to get out of their difficulties in the best way they could: indeed, the town of Cologne more than once broke faith with the Hanse, and humbly sued to be forgiven;—a delinquency which was never charged against Lübeck,—the first, the only, and the never-flinching leader of this extraordinary confederacy.

These wrangling disputes between England and the Hanseatics were allayed for a time, by a treaty for eight years, made in 1456; but the friendly feeling was hollow and transient, for we find King Edward the Fourth, in 1466, calling in question the validity of the powers of the Steel-yard merchants of London; and the merchants had to present him with a large sum of money for the renewal of the charter. Another charter was given in 1470, by which the Steel-yard privileges were given for five years to the Cologne section of merchants *alone*, probably for some pecuniary assistance rendered in that quarter. The Steel-yard merchants are frequently spoken of by our historians as an usurping body, who often went beyond their charter. Always trading in a body, they easily ruined single traders by underselling them: those merchants who were connected with the cities of Bruges and Hamburg were very influential in the Steel-yard, and indeed almost fixed their own prices at will, both for exports and imports. This influence was somewhat checked during the stormy period of the wars between the houses of York and Lancaster; but at the termination of the strife, compensation was made to the Steel-yard merchants for some injuries they had suffered during that period; and a new charter was given to them by Edward the Fourth, in 1472. This charter was confirmed, two years afterwards, in a still more extensive form, by Act of Parliament; whereby the Hanse merchants were freely to trade in England, and the English in the Hanse Towns; and various facilities were afforded for the commercial arrangements of the Hanse merchants. This compact appears to have been acted on for a considerable number of years in a friendly spirit: we will therefore now turn to the continental proceedings of the Hanse.

The confederacy frequently showed itself an overmatch for the neighbouring princes. On one occasion, we find the King of Denmark and Norway, the Marquis of Brandenberg, the Duke of Mecklenberg, the Duke of Brunswick, and other princes, leagued together against the Hanse; but their measures proved abortive. At another time the power of the confederacy was shown, by its interposition being asked by the King of Denmark, for the settlement of a dispute between that monarch and the King of Sweden. Shortly afterwards they were engaged in a war with the Dukes of Brunswick and Lunenberg, whom they defeated and compelled to make a humiliating peace.

We have said that Bruges was one of the cities at which a comptoir or factory had been established by the Hanse. But this does not imply that Bruges was one of the Hanse Towns; it was placed in the same relation as London with the confederacy, and therefore had power to ally itself or not with the confederacy, for particular purposes. We find that in 1471 a treaty of commerce was concluded between the Hanse and the city of Bruges, which stipulated that all the merchandise of the Hanse should be brought to Bruges only, as the sole warehouse for all the Netherlands; for which end, certain ships should be placed at Amsterdam and Sluys, which the merchants of both parties should use; and which were also to be well armed against pirates. Five years after this event, the Hanse showed its power by disfranchising the city of Cologne, on account of the selfish manner in which that city had consulted its own interests in certain transactions, without considering those of the confederacy to which it belonged; and it was only at the intercession of the Emperor Frederick the Third and the Elector of Treves, that Cologne was again admitted into the confederacy. A similar instance occurred in 1478, when the confederacy sent a notice to the King of England, for the information of English merchants, "That the city of Colberg, in Pomerania, had separated itself from the Hanseatic confederacy, and is, therefore, utterly incapable of participating in the privileges of this league in England, until the said league shall certify that Colberg is again reconciled to it."

VI. Decline and Fall of the Hanseatic League.

As we approach nearer to the end of the fifteenth century, we find many symptoms that a decrease in the power of the Hanse was approaching. The various countries of Europe, in proportion as their commerce extended, interfered with the exorbitant privileges of the Hanse merchants. In the year 1486, serious differences occurred between the league and the French, with whom they had, generally speaking, been on amicable terms. In 1491, a solemn assembly of the whole Hanseatic confederacy was held at Antwerp, in great pomp, in order to adjust disputes which were at the time pending with England and with Holland. All parties were actuated by grasping motives, and no satisfactory result followed this meeting; for Holland, as well as England, began to feel that commerce could be well carried on without the aid of the confederacy, and, indeed, in spite of its authority.

Yet, notwithstanding these partial discomfitures, the league was still formidable: in 1492 (the year in which Columbus discovered America,—an event which had much influence on the future fortune of the league), seventy-two cities and towns sent representatives to the general assembly at Lübeck. Their old enemies, the Dukes of Brunswick and of Lunenberg, were again defeated by them about the same period. Four years afterwards, they were involved in disputes with John, king of Denmark, on account of certain political events between the latter and the Regent of Sweden. The King of Denmark had been driven out of Sweden by the Regent; and, in order to punish the Swedes, he requested the Hanse merchants to retire altogether from Sweden. The merchants, however, little caring for the political struggles of others, resolved, at a general assembly at Lübeck, that they could not consent to limit their own commerce, merely because one monarch had baffled another. They refused to accede; but still the Danish king showed himself sufficiently powerful to be a formidable rival to the merchants; for his ships now began to traverse the Baltic without fear of the Hanseatics. Still more rapidly did the power of the Hollanders increase, as was shown in an event which took place in the year 1511. A fleet of Dutch ships, homeward bound from the eastern shores of the Baltic, and consisting of no less than two hundred and fifty merchantmen, and four ships of war, appeared in sight of the city of Lübeck. The Lübeckers thought this a fair opportunity to be revenged on the Hollanders for invading the commerce of the Baltic, which the arrogant merchants claimed as the exclusive right of the Hanse. The Lübeck vessels attacked those of Holland, took some, burned others, and drove the rest into the harbour of Bornholm, where a large Danish fleet lay. The Danes then assisted the Dutch in repelling the attack of the Lübeckers, and driving them into their own port. The Danish fleet had, in the previous year, ranged over the Baltic, taken all the Hanseatic ships it could meet with, burned the suburbs of Travemund, the port of Lübeck, and destroyed many small towns belonging to the Hanse. It therefore appears that the supremacy of the Hanse was now seriously attacked in the Baltic, both by the Danes and by the Hollanders.

An event which occurred in the year 1515, will throw some light on the overbearing system of commerce pursued by the Hanse. The Danish merchants, who carried the produce of Denmark to the Hanse Towns for sale, complained to their sovereign, that they were not permitted to fix the price of their commodities; the Hanse magistrates assumed a power of arbitrarily setting a fixed price thereon; and those magistrates, being themselves merchants, took advantage of their own regulation. The consequence was,

that the Danes were frequently obliged to sell at a losing price; as they were not permitted to re-export their merchandise from those towns after they had once exposed it for sale:—or, if that were not the case, they were at least compelled, if they refused the proffered price, to lodge their commodities in warehouses, there to remain until the prices changed in their favour. Every one, at all familiar with the principles which regulate commercial transactions, must at once see that such arbitrary measures as these, are utterly inconsistent with freedom of commerce, and subversive of the very principles on which it rests. The Hanseatics were not long in experiencing the bad effects of this system; for the king ordered that all Danish merchandise should be exposed for open sale at Copenhagen instead of being carried to the Hanse Towns. Two results followed this order: Copenhagen became the emporium for the whole of Denmark; and the Hanse Towns received a blow which hastened their fall, now rapidly approaching.

Had Sweden and Denmark remained at peace with each other, there is little doubt that the Hanse would have been more rapidly humbled by them. But for centuries there were repeated contests for the crowns of Sweden, Denmark, and Norway; and, as the Hanse Towns had always numerous shipping at their disposal, the various candidates for the disputed thrones were frequently glad to borrow or purchase the aid of the Hanseatics, by which the latter gained great influence which would not otherwise have been possessed. At one time,—about the year 1525,—the Lübeckers actually offered to *sell* the Kingdom of Denmark to Henry the Eighth of England, for a certain sum; but that shrewd monarch reserved his money until it should appear that the Lübeckers were able to do what they professed.

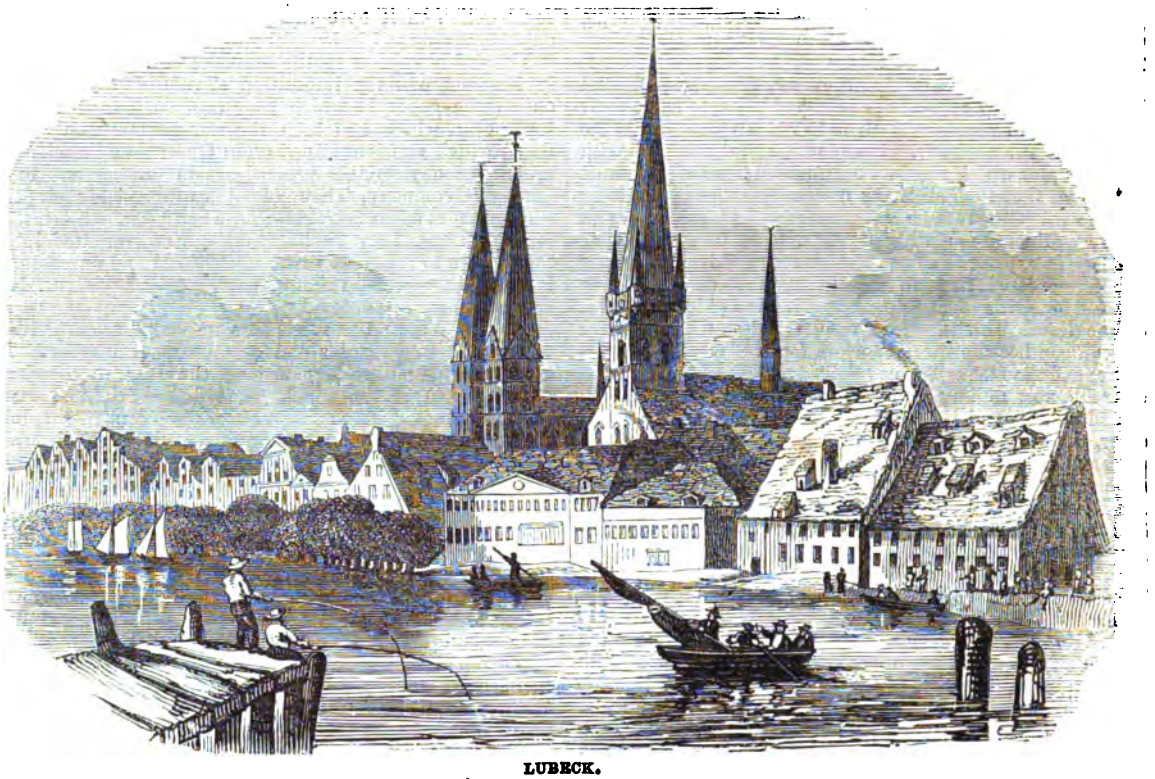
The year 1552 witnessed the first serious attempt to break down the monopoly of the Steel-yard merchants at London, after it had existed 300 years. These merchants had greater facilities and privileges than the English merchants themselves, and complaints against the monopoly now became general. The Steel-yard merchants usually set what price they pleased on both their imports and exports; and having the command of all the markets in England, with joint-stock banks or funds, they ruined the native merchants. They were also accused of defrauding the customs, by taking under their own names (as they paid little or no custom) great quantities of the merchandise of other foreigners not entitled to their immunities. It is said that they had succeeded in monopolizing English commerce to such an extent, that while they exported 44,000 pieces of woollen cloth in one year, all the English merchants together had not exported more than 1100 pieces. A charge was also brought against them of having repeatedly exceeded the charter granted to them, and of having, by a gratuity to the monarch, retained privileges which were not in their charter, and of thereby injuring the English merchants generally. In consequence of these complaints, the privy-council investigated the whole matter, in the reign of Edward the Sixth, examining the modes in which the various privileges had been granted, the parties to whom granted, and the manner in which the favoured merchants had conducted themselves. The result was unfavourable to the Steel-yard merchants; for it was ordered, "that the privileges, liberties, and franchises, claimed by the said merchants of the steel-yard, shall from henceforth be and remained seized and resumed into the King's Grace's hands, until the said merchants of the Steel-yard shall declare and prove better and more sufficient matter for their claim in the premises: saving, however, to the said merchants all such liberty of coming into this realm and trafficking, in as ample manner as any merchant-strangers have within the same."—The last clause shows that there was no unfair or illiberal spirit actuating the council: yet the result was a severe blow to the confederacy; for, from various causes, the comptoirs at Bruges, Bergen, and Novogorod had greatly declined, and London was the chief place to which they looked as the centre of their commerce. The comptoir at Bruges had lost its importance in consequence of the rising importance of the Dutch: that at Novogorod had sunk under the growing power of the Czar of Russia, who unceremoniously seized the goods of the Hanseatic merchants: that at Bergen fell when the power of the Danish kings became settled; for, independent of the spread of a commercial spirit among the inhabitants of Norway, the king tried to get rid of the Hanse merchants by a rather unworthy trick. An ancient toll had been long recognised, of a gold rose-noble, for every Hanse *sail* that entered the harbour: this word "sail" was always meant to imply a *ship*, but the king of Denmark and Norway now put a new construction on it by obliging all ships to pay a gold rose-noble for every sail in or belonging to each ship.

The finishing-blow to the influence of the Hanse Towns in England was the imposition of a duty of 20 per cent. on all the goods in which they trafficked, instead of the 1 per cent. which had been the rate for 300 years. This duty, which was determined on in Queen Mary's reign, did more than any forcible proceedings to put an end to the Steel-yard company. They did not however yield their privileges without a fierce struggle; for when Elizabeth succeeded to the throne, they applied to the Emperor Rodolph to compel her to reinstate them in their old and unreasonable immunities, especially that of paying only 1 per cent. duty. The emperor expostulated with the queen; but she replied that she had done the merchants no wrong: all had been determined in a regular and constitutional manner. The Hanseatics hereupon expelled all the English merchants from Hamburg, a step which greatly injured their cause; for the queen immediately made such orders in council as reduced the Steel-yard merchants, not only to the level, but below it, of her own subjects,—prohibiting them, among other things, from exporting wool. The Hanseatics, bent on revenge, laid a duty of 7½ per cent. on all English goods entering Hanseatic ports; but this did them harm, for the queen laid an equal duty on all Hanseatic commodities.

The result of these proceedings was that the revenue and commerce of England were both much enlarged, while the Steel-yard merchants were deprived of those privileges which had hitherto given them so much power. The Hanseatics complained to the Diet of the empire, and recommended, as the only way of "bringing the queen to terms," that all English merchants should be banished out of the empire, and to prohibit English woollen goods from being imported into any German towns. The Hanse merchants were listened to by the Diet, and Elizabeth so far relaxed from her former resolution as to allow the Steel-yard merchants to trade in England on the same terms as her own subjects, provided English merchants were allowed to trade unmolested at the Hanse Towns. The queen being at that time at war with Spain, gave due notice to the Hanse Towns not to carry into Spain, Portugal, or Italy, any provisions, naval stores, or implements of war, for the use of the King of Spain, on pain of forfeiture of the ships so employed. In defiance of this injunction, sixty Hanseatic fly-boats conveyed wheat and warlike stores to Spain: they had proceeded by way of the Orkneys and Ireland, in order to avoid the queen's fleet, but they were taken by Sir Francis Drake, near Spain, and all the cargoes seized. This seizure led to much bitter correspondence between Elizabeth on the one part, and the Emperor and the Hanse Towns on the other. A general assembly of the Hanse sent a letter to Elizabeth, but allowed themselves to be betrayed into so much warmth that the queen sent them a contemptuous answer. Hereupon the emperor sent a message to her, and she sent a special messenger to explain, candidly and fairly, all the circumstances of the quarrel. Thus terminated the contest; for although the Hanse merchants petitioned to have the Steel-yard privileges restored, the English nation had become too wise to allow English interests to be frustrated by these monopolizing Hanseatics.

Meanwhile the League showed increasing symptoms of feebleness, in its dealings with continental states. The Kings of Denmark and Sweden, who had formerly been so often forced to yield to the Hanseatics, now bearded them in their turn. In 1591 the Leaguers endeavoured to force the town of Elbing, in Prussia, to discountenance English merchants, by forbidding their resort to that town; but the Elbingers had had too many proofs of the advantages of commerce with England to be led to this step: they wrote to Elizabeth, acquainting her with the proposal which had been made to them, and also their determination to continue their friendly relations with the English merchants, as did also the King of Poland. But the Emperor and the Hanse succeeded in compelling the English merchants to leave the town of Staden, as well as several other towns in Germany, whereupon the Dukes of Brunswick and of Holstein, and about a dozen towns in the Netherlands, sent letters to Elizabeth, expressive of their friendly wishes towards English commerce, and the queen at the same time ordered the lord mayor to shut up the Steel-yard, and to expel the turbulent merchants altogether from London.

Wheeler, who wrote about the year 1600, says, that the Hanseatics "are now so much decayed in power and strength, as that the state need not greatly to fear them. For, as the causes which made the Hanse Towns of estimation and



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account in old times, were the multitude of their shippin and sea trade, whereby they stored all countries with their Eastern commodities, (*i.e.*, naval stores, flax, hemp, linen, iron, copper, corn, &c.), and served princes' turns with their large and stout ships in time of war; we shall find at this time, that they have in a manner lost both one and the other long ago, when compared with what they formerly were. And if her Majesty should forbid all trade into Spain, after the example of other princes, they would, in a short time, be quit of the rest; for that trade is their chiefest support at this instant. Besides, of the seventy-two confederate Hanse Towns, so much vaunted of, what remains almost but the report? And those which remain, and appear by their deputies, when there is any assembly, are they able, unless with much ado, to bring up the charges and contributions for the defence and maintenance of their league, privileges, and trade, in foreign parts and at home? Surely no; for most of their teeth are out, and the rest but loose."

Wheeler was right: the process of decay, which he significantly indicates by the "teeth being out," was rapidly going on: the confederacy had lived to realise all the benefit which such an association was calculated to confer on society; and, like a worn-out frame, it was now, by a natural process, sinking into insignificance. In 1604, they had a general assembly, and determined on a solemn embassy to the various countries of Europe, for the renewal of their mercantile privileges. But the day was gone by: the English king, James the First, would have nothing to do with the embassy; and the King of France gave empty promises, but nothing else. In 1612 the King of Denmark, to support the expenses of a war in which he was engaged with Sweden, raised the toll or duties at the Sound, on vessels passing to or from the Baltic. These increased tolls were equally vexatious to the Hanseatics and to the Dutch; and these two powers coalesced, almost for the first time, in an attack on the Danes, in order to lower the Sound duties: Holland was to pay seven-eighths, and Lübeck one-eighth of the expense incurred; and the other Hanse Towns were allowed to join the alliance or not at pleasure. This circumstance showed that the confederacy was no longer one united whole, influenced by uniform councils. These disputes with Denmark lasted for a long series of years; for as the Sound duties constituted an important part of the Danish revenues, the king would not lessen his demands, so long as he had the smallest means of enforcing them.

The year 1630 witnessed the last general assembly of the Hanseatics at Lübeck; after which the confederacy was dissolved, having no longer power to make their coalition advantageous to the constituent towns. But Lübeck, Hamburg, and Bremen united anew, in a limited confederacy, for mutual assistance and protection: and this confederacy appears to have existed, with scarcely any interruption, until 1810, when the French armies disturbed the arrangements of those cities, as well as of Germany generally. At the conclusion of the peace, however, the league between Lübeck, Hamburg, and Bremen was re-established, and still exists. These cities are called the "free cities," or, more at length, "the republics and free Hanseatic cities of Lübeck, Hamburg, and Bremen." This confederacy has the same kind of power (but smaller in degree,) as that which belongs to the various kingdoms, principalities, and dukedoms, of Germany; that is, it regulates its own internal affairs, furnishes a contingent of troops, and has one vote in the general diet or parliament of the empire.

In conclusion, we may remark, that the birth, growth, and decay of the Hanseatic League formed natural links in the progress of European society. The good which it rendered in the thirteenth century was immense, but the seventeenth required not its aid. The ruthless attacks of pirates, and the unjust depredations of the feudal barons, gave birth to the League; but the fifteenth and sixteenth centuries presented events which turned commerce into other channels. By the discovery of America, Spain became a great power, and established a traffic with which the Hanse Towns had nothing to do. By the discovery of the maritime route to India, Portugal became powerful, and Lisbon was the emporium of Indian commerce. By the improvements in navigation, each country was enabled to send its own commodities in its own ships to foreign parts, without the aid of a central port, such as Bruges. By the growth of the Russian power, that supremacy which the Hanse had had in the Baltic now passed into the hands of Russia: and lastly, by the possession of great power for four centuries the Hanse had gradually acquired habits of grasping ambition, to which the advancing intelligence of Europe would no longer submit. These were some of the causes which led to the decay of the Hanseatic League, and we see clearly from them that the time had arrived when the continuance of such an alliance would no longer benefit commerce generally or the Hanse Towns individually.

END OF THE EIGHTEENTH VOLUME.

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